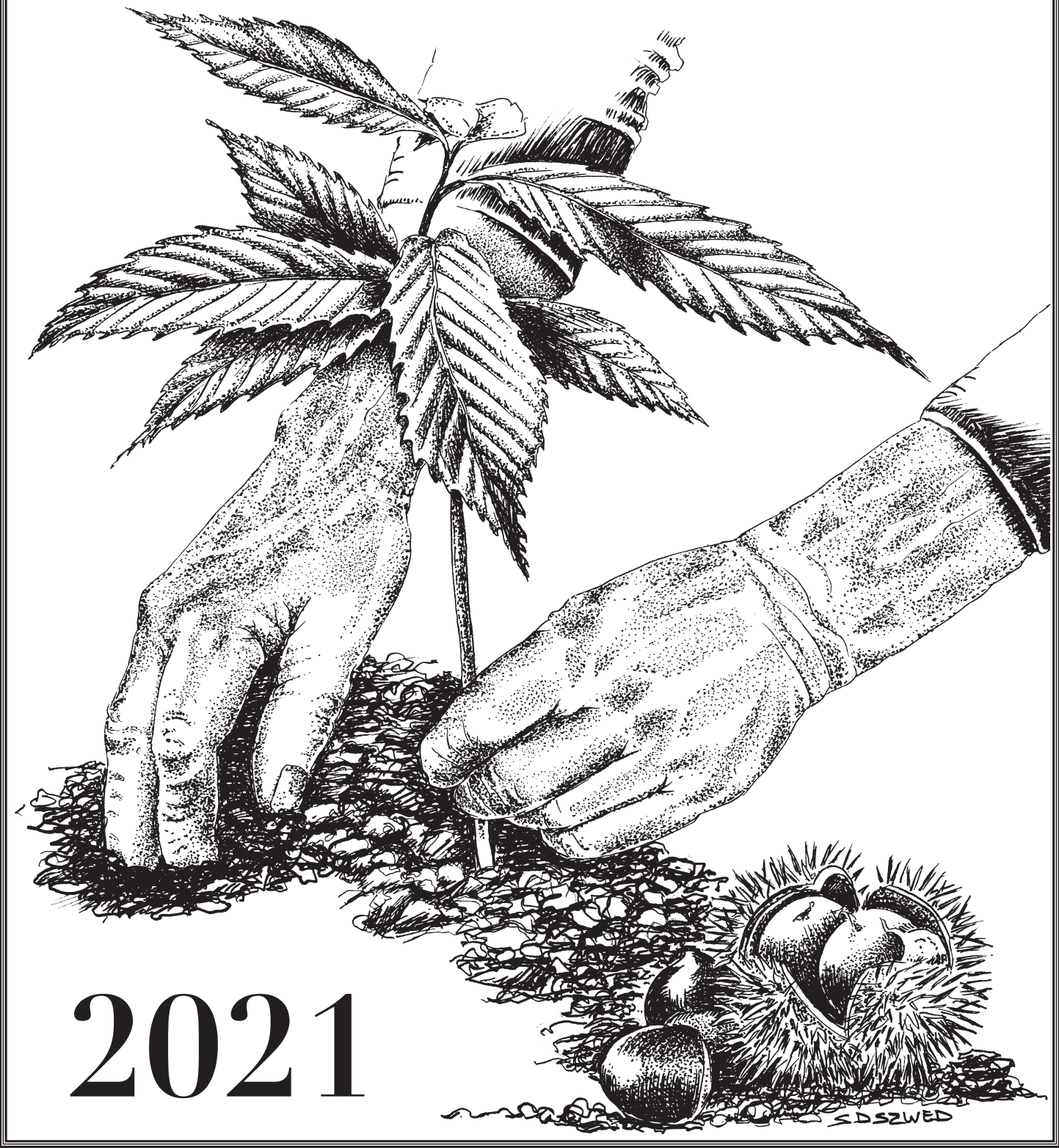
FEDCO

Trees, Shrubs & Perennials



2021

FEDCO TREES 2021

Welcome to Fedco's 37th annual tree order.

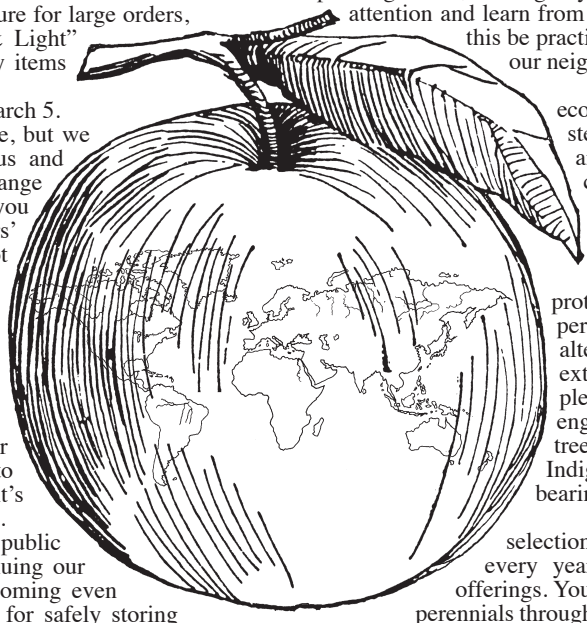
Our goal is to provide the hardiest and healthiest plants available for cold climates, while supporting plant diversity, small-scale local agriculture, and a fair, cooperative and responsible workplace. Our no-frills operation helps keep plants affordable. Consider ordering in a group with co-workers, friends or neighbors to further minimize your costs. Please note our discount structure for large orders, our discount deadline, and the "Small & Light" shipping option for those who desire only items that don't require a giant box.

This year's final ordering deadline is March 5.

The 2020 tree season was a rugged one, but we made it! Thank you for ordering with us and for your flexibility while we had to rearrange operations on the fly. A special thank you to those who donated to cover others' unplanned shipping fees when we could not hold a pickup sale. You all are great.

Heading into 2021, change is afoot. For one, we're expecting public gathering restrictions to remain in place through spring 2021, so in planning for the worst and hoping for the best: We are not setting dates for an early May tree sale. If anything changes between now and then, we'll plaster our website with updates. We fully intend to resume the Tree Sale in future years once it's safe to do so. We love it as much as you do.

Due to a need for space and to restrict public interactions at this time, we are discontinuing our pickup order option. Actually, this was coming even before Covid. We have run out of space for safely storing pickup bags as our tree crops have increased and our building square footage has not. Curbside is not logical in our model, so we are going to ship all orders. We are not raising shipping prices this year even as our carriers increase their rates. For Maine residents, we have a new flat-rate shipping fee of only $10 per order. We hope this makes it feasible for you to receive your trees!



"& so to tenderness I add my action." —Aracelis Girmay

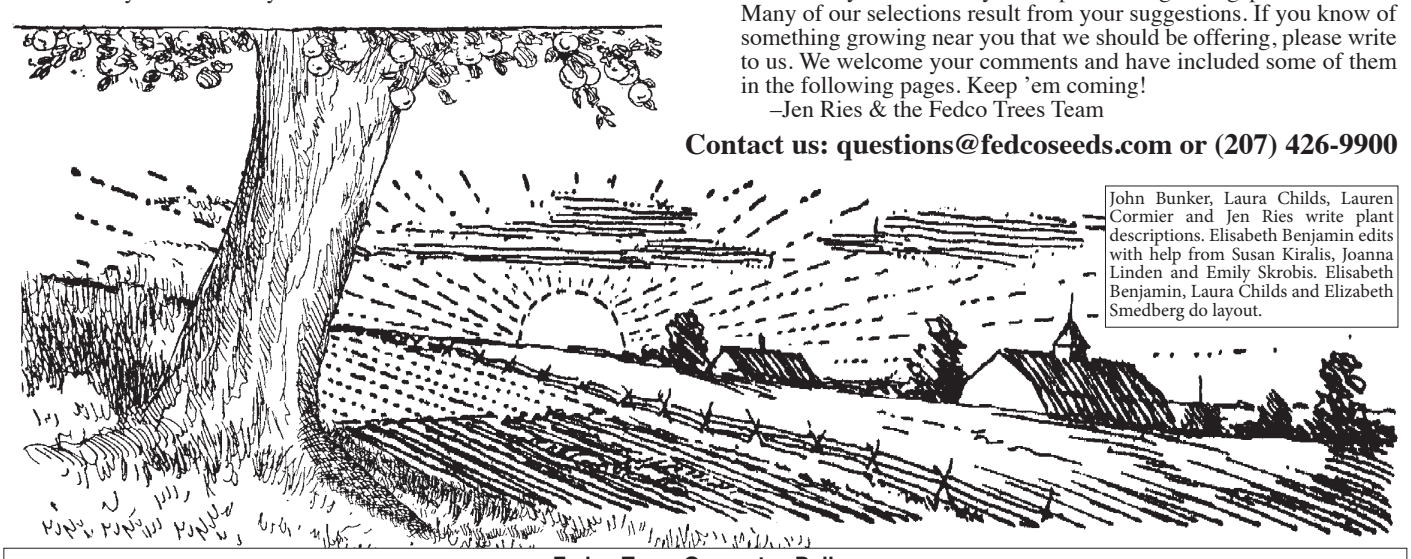
We and everything around us need renewal from time to time. For some this might mean rehabilitating a garden lot or mending a torn object. Others might retreat to a quiet place with candles or birdsong. For many, renewal is grasping a few minutes of sleep amidst disruption and terror. We grab it where we can. We offer more *when* we can. But where do we begin when nothing is enough? Try planting a tree, making it your neighbor and being kind to it. Pay attention and learn from it. Share its fruit and shade. We can let this be practice toward tending relationships with *all* our neighbors.

Regenerative agriculture, restoration ecology, and restorative justice offer other steps toward renewing broken bonds and inequities within plant and human communities. Within these pages, you can read about tree migration in a time of rapid climate change (page 43); about what old trees might teach us in a pandemic (p. 7); and about how we can protect and partner with fragile woodland perennials (p. 57). As we contemplate alternative definitions of restoration, we are extending our cooperative's long-standing pledge to not knowingly carry genetically engineered seed to include plants and trees (p. 31). This year we will also pay Indigenous Royalties on sales of varieties bearing Native American names (p. 56).

As usual, we have varied our plant selections. We offer most of the old favorites every year and rotate through dozens of new offerings. You'll find new fruit trees, ornamentals and perennials throughout the catalog. If you have questions or concerns about your order, please contact us. If you are looking to place a very large order, drop us a line to discuss the options. We're here to help. If you haven't already, check out our Seeds & Supplies and Bulbs catalogs. If you enjoy this one, we're pretty sure you'll like those, too. Consider becoming a member of our cooperative. We invite you to share your experiences growing plants with us. Many of our selections result from your suggestions. If you know of something growing near you that we should be offering, please write to us. We welcome your comments and have included some of them in the following pages. Keep 'em coming!

–Jen Ries & the Fedco Trees Team

Contact us: questions@fedcoseeds.com or (207) 426-9900



John Bunker, Laura Childs, Lauren Cormier and Jen Ries write plant descriptions. Elisabeth Benjamin edits with help from Susan Kiralis, Joanna Linden and Emily Skrobis. Elisabeth Benjamin, Laura Childs and Elizabeth Smedberg do layout.

Fedco Trees Guarantee Policy

Please inspect your order upon receipt and notify us immediately if something is missing or incorrect. Occasionally, plants incur damage during shipping. If limbs or tops are broken, prune to the next good bud. The plant will do fine. We guarantee to ship you a plant that is healthy, will leaf out, and is true to name. We expect that you will care for the plant from the moment it arrives, plant it in a timely fashion, water it (about 1" per week after bud swell) and protect it (see pp. 67-70.) Because we have no control over growing conditions such as weather, soil, cultural practices, pests, wildlife, or weed whackers, we cannot guarantee a plant's survival past leaf break. If you see no sign of life, scratch the outer bark with your fingernail. If the inner bark is green, the tree is still alive. Some plants take longer than others to break dormancy, so you may need to be patient. If you have thoroughly cared for the plant and it dies, we will refund the cost of the plant. In some cases, we may choose to issue a partial refund. We cannot offer replacements. Inevitably, some plants die through no fault of yours or ours. If a plant dies during the first growing season, don't hesitate to contact us. We will work with you to determine what went wrong. We are partners in the endeavor of filling the planet with plants and we want you to succeed. Claims must be made no later than July 31 of the year the plant was received. We do not guarantee plants that are potted by you, except for perennials, which are the only plants we recommend for temporary potting. We are not responsible for the quality of plant material in the event your package is not promptly picked up or opened. For scionwood orders, we do not issue refunds or replacements based on diameter of wood. We are not responsible if your grafts fail.

We limit our liability in all instances to the purchase price. The liability of Fedco Seeds, Inc., for breach of warranty, or any loss or damages arising out of the purchase or use of our products, including loss or damages resulting from any negligence whatsoever on our part, or strict liability in tort, shall be limited to the purchase price. By acceptance of the merchandise, the buyer acknowledges that the limitations and disclaimers herein described are conditions of sale, and that they constitute the entire agreement between the parties regarding any warranty or liability. Failure to assert claims within the aforementioned time frame renders this warranty null and void.

Important dates & deadlines

- **Volume discount deadline**, Friday, **January 15, 2021**
- **Ordering deadline** (except scionwood), Friday, **March 5**
- **Shipping** by FedEx, beginning late March, through April 23

- **Scionwood order deadline**, Friday, **February 19**
- **Shipment of scionwood** & rootstock starts around March 15.

Due to the Covid-19 pandemic, we will not be hosting our annual Tree Sale. *If we have leftover inventory,* we will re-open online ordering mid-April. Check our website for updates!

FEDCO TREES
Garden · Farm · Orchard

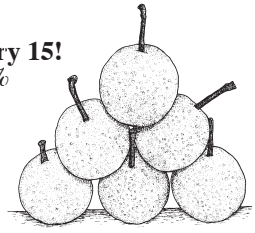
Where is everything?

	begin on page
Apples	4
Pears	18
Stone Fruits	20
Raspberries	24
Blueberries	25
Strawberries	26
Grapes	27
Kiwiberries	28
Vines	29
Nuts	30
Shade Trees	32
Conifers	33
Rootstock / Scionwood	38
Small Trees & Shrubs	40
Crabapples	44
Roses	46
Elderberries	48
Lilacs	50
Groundcovers	51
Garden Roots	53
Mushrooms	54
Herbaceous Perennials	55
Herbaceous Medicinals	63
Tender Summer Bulbs	66

Ordering Instructions	p. 34
Order Forms	center
Perennial Planting Guide	p. 55
Tree Planting Guide	p. 67-70
Complete Index	p. 71

For complete **Ordering Instructions,** see page 34.

- Order online at **fedcoseeds.com/trees**. You can also check product availability and see color photos of most of our trees, shrubs and perennials.
- **Volume discounts: Order by January 15!**
  Orders $100 & over deduct 5%
  Orders $300+ deduct 10%
  Orders $600+ deduct 15%
  Orders $1200+ deduct 20%
- **Group ordering:** Earn volume discounts and save on shipping by ordering with neighbors. Learn more on p. 34.
- We cannot offer order pickups this year, but **Maine customers** pay only $10 flat-rate shipping on any size order!



New for 2021 (or back after a long absence!)

- New Fruits, Berries, Grapes & Hops!
- American Sycamore
- Bud's Yellow Twig Dogwood
- White Diamonds Hydrangea
- Centerglow Ninebark
- Mt. Aso Japanese Pussy Willow
- Bunchberry
- New Heathers!
- New Crabs and Roses!
- New Perennials!

Indigenous Royalites

Fedco will donate 10% of sales on varieties bearing Native American names to Nibezun, a Wabanaki project in Maine that is working to rematriate Penobscot land and to create dialogue on healing throughout the extended community. For more about Indigenous Royalties, see page 56.

Our Variety Descriptions –

- **All trees and plants are bare-rooted** (except where noted), and even a large order can fit into a station wagon. Because of the nature of dealing with living commodities, **size variations will naturally occur** within each crop.
- For fruit trees and berries, the **exact dates of peak ripeness** will vary from place to place.
- The **zone hardiness rating** will aid you in determining whether a plant will be hardy for you. The average minimum temperature in your area determines your zone (chart on p. 71). All plant descriptions list the coldest hardiness zone. Your own soil conditions, microclimate and topography will be equally important in determining the best varieties for you.
- Please note **pollination requirements** for fruits, nuts and berries. Some plants are self-pollinating, others require a second plant for pollination, and others require a second variety.
- We strive to give you accurate information about all the plants we sell. If you notice inaccuracies, please let us know.

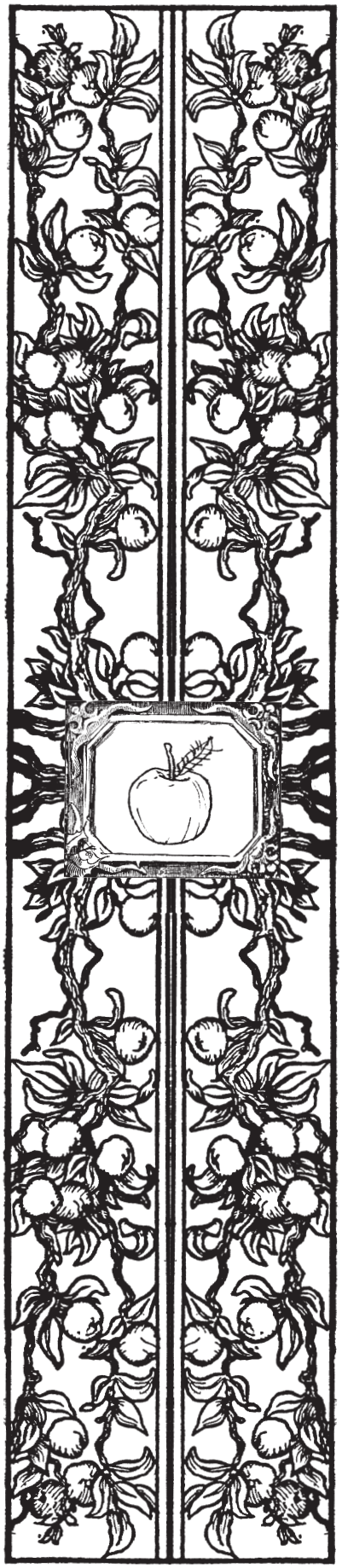
Abbreviations:
ME Grown = grown in Maine at one of our small local nurseries.
PVP = Plant Patent Act.

VARIETY NAME · RIPENING TIME · AG STATION TEST NUMBER · PARENTAGE

Good Trouble Summer. AL 221 (Eddie x Willie Mae). Pike County, Alabama. Lewis intro, 1940. One of numerous trees of Freedom improving the landscape of Washington, DC, and inspiring growth nationwide. Fruits shine like a beacon for all to see. Tree develops strong leaders. Is it time to plant Good Trouble? We may not have chosen the time but the time has chosen us. Z8. ← HARDINESS ZONE
998A Good Trouble, $30.25

YEAR OF INTRODUCTION · BOTANICAL NAME · CULTIVAR NAME · COMMON NAME · MATURE HEIGHT x WIDTH

Sambucus americanus **'Prine's' Elderberry** 6-12' x same. Maywood, IL, 1946. Selected for expressing a wide range of flavors, from bluegrass to rockabilly. Sometimes called **Tree of Forgiveness** by those living along the Green River of Western Kentucky. Blossoms shine like silver moons rolling on the ground. When we harvest the fruits of this elder, there won't be nothing but big ole hearts dancing in our eyes. Z3. (1-3') ← PLANT STOCK INFO
999A Prine's Elderberry, $15.00
← ITEM NUMBER



	Apple variety	Season	All-Purpose	Fresh Eating	Storage	Cooking	Pies	High Flavor
101	Alexander	fall		●		●		
102	Ashmead's Kernel	winter		●	●			●
103	Baldwin	winter	●	●	●	●	●	
105	Bethel	winter	●	●	●	●	●	
106	Black Gilliflower	winter			●	●		
107	Black Oxford	winter	●	●	●	●	●	
108	Blenheim Orange	fall		●		●		
109	Blue Pearmain	winter	●	●	●	●	●	
110	Bourassa	fall		●				●
111	Briggs Auburn	winter	●		●	●	●	●
112	Brock	winter	●	●	●	●		
113	Burgundy	fall		●		●		●
114	Calville Blanc d'Hiver	winter	●	●	●	●	●	
115	Canadian Strawberry	fall		●				●
116	Chenango Strawberry	summer		●		●		
117	Cherryfield	winter	●	●	●	●	●	●
118	Chestnut	fall		●		●		●
119	Cora's Grand Greening	fall	●	●		●		
120	Cortland	fall	●	●		●	●	
121	Cox's Orange Pippin	fall		●				●
124	Duchess of Oldenburg	summer	●	●		●	●	
125	Dudley Winter	fall	●	●		●	●	
126	Esopus Spitzenburg	winter	●	●	●	●		●
127	Fall Pippin	fall	●	●	●	●	●	
130	Frostbite	fall		●	●			●
131	Golden Russet	winter		●	●			●
132	GoldRush	winter		●	●			●
134	Gravenstein	summer	●	●		●	●	●
135	Gray Pearmain	winter	●	●	●			●
136	Grimes Golden	winter	●	●	●	●	●	●
137	Honeycrisp	winter		●	●			●
138	Hurlbut	fall		●		●		
140	Keepsake	winter	●	●	●	●		
142	King David	fall	●	●	●	●	●	●
144	Liberty	fall	●	●		●		
146	Macoun	fall		●				●
147	McIntosh	fall	●	●		●		
148	Milden	winter	●	●	●	●	●	
150	Moses Wood	summer	●	●		●	●	
151	Mother	fall		●	●			
153	New Brunswicker	summer	●	●		●	●	
154	Newtown Pippin	winter	●	●	●	●		
157	Northern Spy	winter	●	●	●	●	●	●
159	Opalescent	fall	●	●	●	●		●
160	Pomme Grise	fall		●	●			●
162	Pristine	summer		●				●
164	Pumpkin Russet	fall		●		●		
165	Pumpkin Sweet of Orland	fall		●		●		
166	Red Astrachan	summer				●	●	
167	Red Canada	winter		●	●			
168	Redfield	fall				●	●	
171	Rhode Island Greening	fall	●	●	●	●	●	
172	Ribston Pippin	fall	●	●	●	●		●
173	Rolfe	fall		●		●		
174	Roxbury Russet	winter	●	●	●	●		●
175	Rubicon	winter	●	●	●	●	●	
176	Sheppard's Sweet	fall				●		
177	Spice Sweet	summer		●			●	●
179	Stark	winter	●		●	●		
180	Sweet Sixteen	fall	●	●	●	●	●	●
182	Tater House	fall		●	●	●		
183	Tolman Sweet	fall	●	●	●	●		
184	Trailman	summer		●				●
186	Wagener	winter	●	●	●	●	●	
187	Washington Royal	winter		●	●			
188	Wealthy	fall	●	●		●	●	
189	Westfield Seek-No-Further	fall		●	●			●
190	White Pippin	winter		●	●			
191	Wickson	fall		●	●			●
192	Williams Pride	summer		●		●		
193	Windham Russet	fall		●				●
194	Winekist	summer	●	●		●		●
196	Winter Banana	winter		●	●	●		
198	Wolf River	fall				●	●	
199	Yellow Bellflower	winter	●	●	●	●	●	
200	Yellow Transparent	summer		●		●		
201	Zestar	summer		●				●

Choosing the right apple

Summer apples ripen in summer, are generally crisp only for a short period, do not store well, and are often best for cooking.
Fall apples store longer and are useful for a wide variety of purposes.
Winter apples ripen mid to late fall, store well, and reach their best flavor after weeks, or even months, of storage.
Dessert apples are delicious eaten raw.
Cider apples are especially suited to making fermented "hard" cider. Some cider apples are also good dessert fruit, but most are not. See the cider section on pages 16-17.
Subacid means tart!
Russet is a skin texture (fairly common on apple varieties and on a few pears and potatoes) that looks and feels somewhat like suede.
Bloom is a naturally occurring dust-like yeast film on the skin of some varieties of apples, plums, grapes and blueberries.

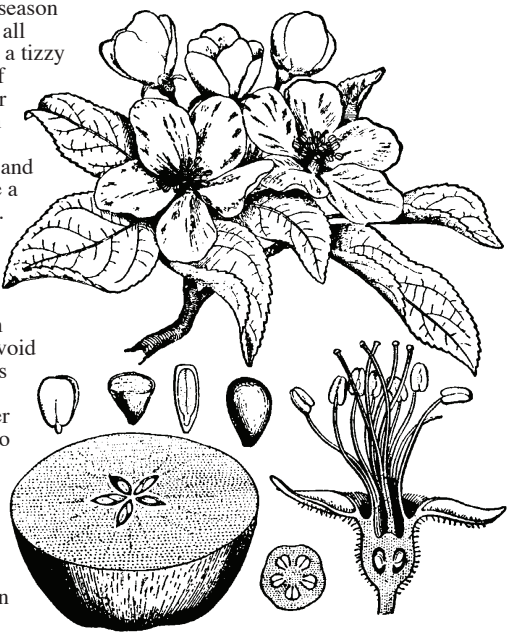
Hardiness zone: The USDA plant zone hardiness map (see page 71 for chart) is a guide designed to assist gardeners and orchardists in choosing suitable plants. The zones are based on the average annual minimum winter temperature. The lower the temperature, the lower the zone rating number, and the "hardier" the plant. Zone 3 is about as cold as it gets in any part of New York and New England. Most of northern New York, Vermont, New Hampshire and Maine would all be Zone 3. The central part of the four states would be Zone 4. The southern half of each state would be Zone 5 or 6.

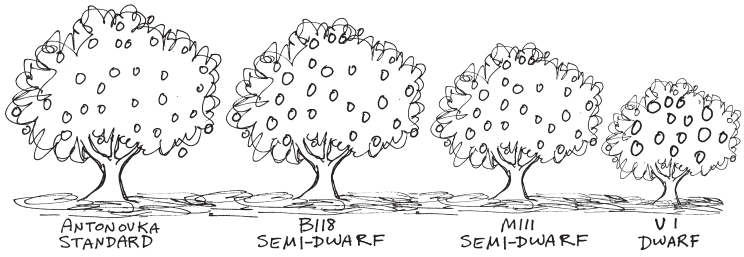
When choosing apple varieties, note the zone rating at the end of each description. If an apple has a Z3 rating, you will be able to grow it successfully in the coldest locations in Maine, as well as two or three zones "south." In other words, if the rating is Z3, it may be in its prime in Z3, but should do well down to Z5 or 6. Typically, it will not perform well outside of that approximate range. Note that hardiness works both ways: you can't grow mangoes in Maine, and you can't grow most apples in Florida.

Choosing a variety: Not every variety is right for you. All-purpose apples are just that—they're good for a bunch of jobs. If you're planting just one tree, start there. However, if you're a history buff, consider the historical varieties and maybe plant one that originated nearby. If you don't eat many apples fresh but love pies, go for the pie apples. If you're a dessert connoisseur, skip all the others and go for the highly flavored dessert varieties. Some are strictly for cider. Some are great to put out at the camp for summer use. Some are perfect for those who want fall fruit but don't have a root cellar. Others keep all winter and into the following summer. Read the descriptions and consult the chart. If you have a question about a specific variety, drop an email: trees@fedcoseeds.com. We'll try to help!

Care: Apple trees are adaptable to a variety of soils and climates, though they prefer well-drained fertile soil. See pages 67–70 for information on soil preparation, planting and pest control. Varieties that bear fruit annually are noted in the descriptions; others normally bear every other year. With diligent annual pruning and thinning, most apples will produce an annual crop, one heavy, the next light.

Pollination: All apple trees require a second variety for pollination, but any apple or crabapple blooming within a quarter mile will probably do. Customers frequently ask us about pollination and apples. Early season, midseason, late season bloomers—what does it all mean? Should you be in a tizzy about pollination? No. If there is at least one other apple tree somewhere in your neighborhood, the bees will do their thing, and you'll get fruit. It can be a wild roadside apple tree. It can be an ornamental crabapple. It can be old or young, in your yard or your neighbor's. But it must be different from yours. In other words, avoid planting ten Honeycrisps if no other apples are in sight. Most apples flower at about the same time so timing is almost never an issue. However, if you live on a desert island with only an early bloomer and a late bloomer, you should plant a midseason bloomer, too.





Choosing a rootstock

Rootstock determines the size, longevity, hardiness and growth habits of a tree. After enthusiastic response from customers, we continue to offer an assortment of dwarf and semi-dwarf rootstocks in addition to the standard.

We offer bundles of rootstock for grafting on page 39.

Standard rootstock: Most of the apples we offer are on standard (full-sized) Antonovka rootstock. Standard trees have deep, substantial—and therefore hardier—root systems. By selecting the varieties appropriate to your district, grafted on standard rootstock, you may well be planting a tree that will be picked by your grandchildren's grandchildren. Standard trees will grow to be large, but you can manage the size with pruning. The largest trees in our orchard are now about 30 years old, yet the tallest are well under 20' due to careful pruning. Although standard-sized apple trees may be planted as close as 10–15' apart, they were typically planted 30' apart in 19th-c. orchards. We generally plant standard trees 20–25' apart with good results. (Trees on standard stock are 3-6'.)

Semi-dwarf and dwarf rootstocks: We offer an assortment of semi-dwarf and dwarf apples on Bud 118, M111 and V1 rootstocks. Each has great advantages for some growers, but beware! These size-controlling rootstocks also have their limitations. Please read on and decide if they are what you want. If you are uncertain, stick with the good old standards. Trees on Antonovka (standard rootstock) are extremely rugged, hardier, more tolerant of drought and poor soils, very long-lived, and more capable of thriving under a regime of benign neglect. (Trees on semi-dwarf stock are 2½-5'; dwarf stock, 2-5'.)

• **Bud 118 semi-dwarfing** rootstock produces a tree about **85–90%** of standard size or even larger. Sometimes Bud 118 trees are called semi-standards or even standards. Plant about 20–25' apart. Considered to be more precocious (fruits at a young age) than standards, and probably more productive. Very hardy, though not as hardy as Antonovka.

108B Blenheim Orange
116B Chenango Strawberry
118B Chestnut
121B Cox's Orange Pippin
124B Duchess of Oldenburg
126B Esopus Spitzenburg
130B Frostbite
132B GoldRush
136B Grimes Golden
140B Keepsake
150B Moses Wood
159B Opalescent
176B Sheppard's Sweet
180B Sweet Sixteen
184B Trailman
192B Williams Pride
201B Zestar

• **M111 semi-dwarfing** rootstock produces a tree about **65–80%** of standard size. Sometimes M111 trees are called semi-standards. You can plant them closer together than standards, about 15–20' apart. M111 may not be more precocious than trees on standard. However it will likely be more productive. It has a relatively shallow spreading root system, does well in light soils, and is relatively drought tolerant. It is less well-rooted, not as long-lived, and not as hardy as Antonovka.

102C Ashmead's Kernel
103C Baldwin
107C Black Oxford
112C Brock
113C Burgundy
114C Calville Blanc d'Hiver
120C Cortland
131C Golden Russet
137C Honeycrisp
144C Liberty
147C McIntosh
157C Northern Spy
162C Pristine
164C Pumpkin Russet
167C Red Canada
168C Redfield
174C Roxbury Russet
175C Rubicon
191C Wickson
194C Winekist
223C-237C All cider varieties
524C-533C All crabapples

• **V1 dwarfing** rootstock produces a small dwarf tree about **55%** the size of a standard tree. You can plant trees 10–15' apart. Trees on V1 are very hardy, somewhat fireblight resistant, sucker very little and should be staked or wired for support. We have been happy with our V1 trials. V1 (Kerr x M9) is one of several dwarfing rootstock introductions from the Horticultural Experiment Station in Vineland, Ontario, Canada, 1958.

120E Cortland
132E GoldRush
137E Honeycrisp
144E Liberty
147E McIntosh

Apples *Malus* spp.

Rootstocks

We offer most apple varieties on standard-sized Antonovka rootstock. Where

A follows the item number in the apple section, the variety is on standard rootstock.

B, the variety is on Bud 118 rootstock,

C, is on M111 rootstock, and

E is on V1.

ME Grown = grown in Maine at one of our small local nurseries.

For more about rootstock, see pages 5 and 39.

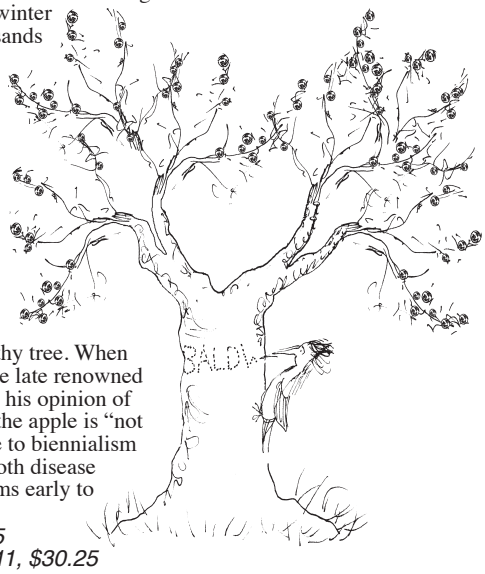
Alexander Fall. Unknown parentage. Ukraine, c. 1700. Originally known as **Aporta**. Renamed Alexander in honor of Czar Alexander I (1777–1825). Very large round-conic fruit, best know for its cooking qualities, although also quite good tart fresh eating. Faintly red-striped in the shade and brightly blushed orange-red in the sun. Firm coarse tender slightly tart juicy flesh. Arrived in the U.S. in 1835 and quickly spread north. Long famous in Aroostook County and other northern areas where it can be picked for several weeks, reaching its prime in late fall. One of the parents of Wolf River. Good cropper. Very hardy. Resistant to scab. Blooms midseason. Z3. **ME Grown.**

101A Alexander, $30.25

Ashmead's Kernel Winter. Unknown parentage. Gloucester, England, about 1700. Possibly a seedling of Nonpareil. An after-dinner apple of unparalleled quality. Not for those who like mild sweet apples. Each bite is an intense aromatic sting of sharp and sweet, with hints of other indescribable but absolutely wonderful tastes and aftertastes. Beginning to show up here and there in commercial orchards. A good sharp addition to hard cider. Medium-small oblate and lopsided orange-gold-green russet fruits ripen in October. Store until the New Year to reach perfection. Keeps until they're all gone. Moderately vigorous tree may bear irregularly, but it's worth the wait. Somewhat scab resistant. Blooms midseason. Z4. **ME Grown.**

102A Ashmead's Kernel, $30.25
102C Ashmead's Kernel on M111, $30.25

Baldwin Winter. Wilmington, MA, about 1740. Also called **Butters Apple** or **Woodpecker**. Discovered on the Butters Farm by a surveyor planning the Middlesex Canal and noted as a favorite site for local woodpeckers. By 1850 Baldwin was the standard all-purpose home and commercial variety wherever it was grown. It remained dominant in Maine until the terrible winter of 1934 when tens of thousands of trees perished and McIntosh became king. Large round-conic thick-skinned fruit, almost entirely blushed, mottled and striped with red and deep carmine. Hard crisp juicy yellowish flesh makes excellent eating and cooking. Makes top-quality hard cider, blended or alone. Keeps till spring. Vigorous adaptable hugely productive long-lived healthy tree. When grower Dave Gott asked the late renowned entomologist Ron Prokopy his opinion of Baldwin, Ron replied that the apple is "not practical commercially due to biennialism but the only apple that is both disease and insect resistant." Blooms early to midseason. Z4. **ME Grown.**



103A Baldwin, $30.25
103C Baldwin on M111, $30.25

Bethel Winter. Unknown parentage. Bethel, VT, before 1855. Well-known all-purpose Vermont heirloom. Large dark red fruit with prominent dots. Orchardist and author Michael Phillips wrote to me, "Fruit quality is always excellent, with very little scab and generally too late for maggot fly interest. This is a divine eating apple that first month off the tree. As crispness starts to fade, Bethel still lays claim to being a prime pie apple for the holidays. We use it as well in cider: think pearmain aromatic with body. Apples develop good color even within canopy so I tend not to prune Bethel quite as heavy." We also like it baked. Although brighter red than Blue Pearmain, you can see why it's in a collection of varieties known as the Blue Pearmain group. Blooms later half of midseason. Z3. **ME Grown.**

105A Bethel, $30.25

Black Gilliflower Fall-Winter. Probably from Connecticut, well before 1800. Well known in old Maine orchards where it's called **Sheepnose**. Sometimes called **Gilliflower**. Very old easily recognizable American cooking heirloom with medium-sized long distinctly conic fruit, shaped like a sheep's nose. The skin color ranges from dark green to deep purple to nearly black. Fruit quality is subacid, aromatic and dry. Old timers used it for mincemeat. Older editions of *Joy of Cooking* have an excellent mincemeat recipe: chopped beef, suet, sugar, cider, raisins, currants, citron, lemon and orange peel, sour cherries, nuts, nutmeg, cinnamon, cloves, and lots of apples. Black Gilliflower would be perfect. Serve with brandy. Also recommended for drying. Keeps until February. Blooms late. Z4. **ME Grown.**

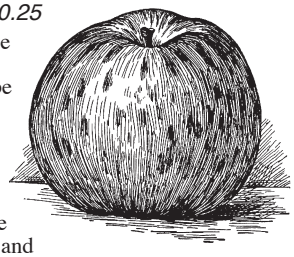
106A Black Gilliflower, $30.25

Black Oxford Winter. Unknown parentage. Paris, Oxford County, ME, about 1790. This outstanding apple, a favorite long ago around much of Maine, has made a huge comeback. In 2020 it reclaimed from Honeycrisp its status as our best-selling apple! Medium-sized round fruit, deep purple with a blackish bloom. From a distance you might think you'd discovered a huge plum tree. Excellent pies, superb late cider. Leave the skins on for a delightful pink sauce. Best eating late December to March, but we've eaten them in July and they were still quite firm and tasty. They get sweeter and sweeter as the months go by. Good cooking until early summer. Some insect and disease resistance. Unusual light pink blooms early to midseason. Z4. **ME Grown.**

107A Black Oxford, $30.25
107C Black Oxford on M111, $30.25

Blenheim Orange Fall. From outside the walls of Blenheim Palace, Woodstock, Oxfordshire, England, before 1800. Large beautiful rich-yellow oblate fruit with a prominent red blush and a big russet splash surrounding the stem. *The Apples of New York* calls Blenheim "excellent for either dessert or culinary use." Crisp and juicy. Keeps until about mid-December. One of the most famous English heirlooms and one of the few varieties from England to be grown successfully in Maine early on, probably arriving here well before 1870. In 2014 we found four ancient Blenheim trees down near Boothbay. Our scionwood comes from the USDA collection in Geneva, NY. Blooms midseason. Z4. **ME Grown.**

108B Blenheim Orange on B118, $30.25



Blue Pearmain Fall-Winter. Thought to be from Middlesex County, MA, 1700s. Our favorite for baked apples—it was made to be stuffed. Moderately juicy flesh, firm, dense and slightly crisp, sweet with a bit of a tart background flavor. Incredibly beautiful medium to very large fruit is streaked and splashed with purplish red, mottled with russet and covered with a distinct dusty blue bloom. In a pie, it has just enough firmness and a good balance of sweet and tart with hints of pear. Tart coarse yellow sauce cooks up in a couple minutes. Tasty eaten out of hand. One of New England's most famous varieties. Mentioned by Henry David Thoreau as a favorite in his wonderful essay "Wild Apples." Grown throughout much of Maine for well over 200 years. Massive trees still found here and there. Keeps in the root cellar until midwinter. Blooms midseason. Z4. **ME Grown.**

109A Blue Pearmain, $30.25

Bourassa Fall. Europe or Quebec, before 1750. Very high-quality tender slightly dry dessert fruit with a rich spicy aromatic flavor. Elongated-conic fruit features a prominent reddish blush that shines through a russet web. Not a storage apple but keeps until about December. Was much-loved in southeastern Canada, northern Vermont and Maine from before the American Revolution. After more than 100 years of popularity, it disappeared, like so many old varieties, at the end of the 19th century. Several years ago, Maine fruit explorer Regina Grabrovac found three ancient russets in Dennysville, way downeast, not far from the Canadian border. We believe that two of the trees are the Bourassa. Leaves from those trees will undergo DNA analysis this year. Probably blooms midseason. Z3. **ME Grown.**

110A Bourassa, $30.25

Briggs Auburn Fall-Winter. Selected by Thomas Record, Auburn, ME, before 1849. Subsequently named for John Briggs of Auburn by Dr. Holmes, editor of *Maine Farmer*. Large round-oblate clear yellow fruit with glowing greenish shading and a slight blush. All-purpose apple with a bright well-balanced flavor including hints of banana and blackberry. Superior fresh eating well into winter and top-notch cooking. Peel it and it's highly aromatic. Produces a thick creamy golden-yellow medium-sweet sauce. Excellent in oatmeal. In a pie, the slices lose their shape but the crust won't sink and pie doesn't get watery. Medium-large reliably bearing productive tree. Our scionwood comes from an old orchard in Waldo County, ME. Blooms midseason. Z4. **ME Grown.**

111A Briggs Auburn, $30.25

Brock Fall-Winter. ME 7-492 (Golden Delicious x McIntosh) Monmouth, ME, 1966. Very large conic all-purpose fruit is yellow with deep rusty-red blush. Cream-colored fine-grained flesh is aromatic, sweet and crisp. Small core makes it excellent for sauce. One of the featured varieties in the exceptional book *Apples for the 21st Century* where West Coast author and orchardist Warren Manhart calls it "similar to Golden Delicious, but with more aroma and flavor." The original cross was made in 1934 by Russ Bailey, as part of a UMaine program to breed hardy commercial varieties after the disastrous winter of 1933-34. Named for Henry Brock who popularized the apple when it was under test at his orchard in Alfred, ME. Fruits over a long period—a plus for home orchardists. Keeps till midwinter. Vigorous tree develops strong wide-angled branches. Scab susceptible. Blooms midseason. Z4. **ME Grown.**

112C Brock on M111, $30.25

Burgundy Late Summer-Early Fall. NY 161 (Monroe) x NY 18491 (Macoun x Antonovka) NY Ag Exp Stn, 1974. Northern Aroostook County fruit growers Steve and Barb Miller introduced Burgundy to us as Barb's favorite cooking apple. Striking for its large (3") size and glossy purplish-red roundish fruit. Waves and rays of red in the firm juicy flesh. Strong distinctive aroma and a pleasantly unique flavor with a tart zingy aftertaste. One taste tester said, "Wow, hey, that's really different!" Steve said, "It reaches out and grabs you!" Makes an aromatic well-balanced early cider. Bears annually, and fruit hangs on for extended picking. Stores about two months. Recommended for all northern districts. Extremely hardy. Blooms late. Z3. **ME Grown.**

113C Burgundy on M111, $30.25

Calville Blanc d'Hiver Winter. Unknown parentage. France or Germany, 16th c. Also called **White Winter Calville**. Famous as a dessert and cooking apple for more than 400 years. Steve Wood of Poverty Lane Orchards in Lebanon, NH, called it "the best culinary apple in the world." Large flattish pale green-yellow fruit with deep ribs and a dotted orange-red blush. Creamy-white aromatic fine-grained juicy flesh with a sweet distinctive effervescent flavor. Also recommended for vinegar, fresh cider and as a sharp (acid) component in fermented cider. Should be stored a month to reach peak flavor. Will keep until midwinter. Very vigorous strongly upright vase-shaped tree with good branch angles. Not for coldest areas though certainly hardy to Zone 4. Blooms midseason. Z4. **ME Grown.**

114A Calville Blanc d'Hiver, $30.25
114C Calville Blanc d'Hiver on M111, $30.25

Canadian Strawberry Fall. Unknown parentage. Solon, ME. Beautiful superb-tasting dessert apple. Surprisingly juicy distinctly tart full-flavored medium-to-large round-conic fruit. Rich buttery-yellow skin overspread with a veil of vibrant red-orange. Very good early season cider. Perfectly ripe at the end of September in central Maine where, in a good year, you won't find a better apple. At our Common Ground Fair taste tests, it usually vies for the crown with Cox's Orange Pippin. It was the overwhelming favorite in 2017 and runner-up in 2018 and 2019. In 1996 the late Roy Slamm convinced me to visit and subsequently propagate nursery stock from the three ancient "Strawberry" trees on his South Solon farm, thus saving the apple from almost certain extinction. Now spreading throughout Fedcoland. Fruit keeps about a month. Blooms midseason. Not to be confused with Chenango Strawberry. Z4. **ME Grown.**

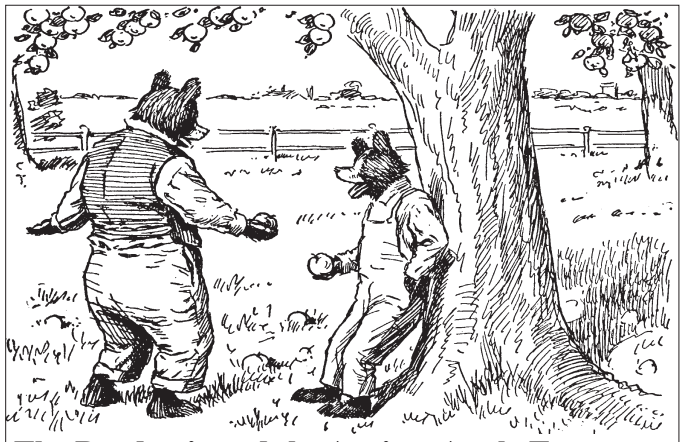
115A Canadian Strawberry, $30.25

Chenango Strawberry Late Summer. Lebanon, NY, or possibly Connecticut, c. 1850. Excellent tender-skinned tender-fleshed dessert and cooking apple ripens over several weeks in September and into October. Subacid and aromatic. Yellowish-white skin covered with soft pastel pinky-red "strawberry" stripes and a very long famously distinctive conic strawberry shape. One of the more famous American heirlooms—there's no other apple like it. Originally called Frank, after the man who first introduced the variety. Another early synonym was Jackson Apple, possibly his last name. Also known by several other synonyms including Zepherus Chernogous. Wow! Tends to bear annually. Keeps only a week or two. Blooms midseason. Z4. **ME Grown. Indigenous Royalties.**

116B Chenango Strawberry on B118, $30.25

Cherryfield Fall-Winter. Wyman B. Collins intro, Cherryfield, ME, about 1850. Also called **Collins**. Popularized more than 100 years ago by David Wass Campbell of Cherryfield and Welton Munson of UMaine. This all-purpose variety does everything well. We love it. Relatively tart with only a hint of sweetness. Makes a fairly quick tart sauce with a smooth texture—the skins mostly dissolve. Good in salads. Makes a highly flavored pie with great color and texture. Excellent sliced up on pizza. Irregular conic shape, washed and striped with pink. Ripens about Oct. 15 and keeps until the end of March. Rediscovered with the help of Margery Brown, Larry Brown, and Kathy Upton, all of Cherryfield, ME. Historically, may have been grown in Kennebec County under the name Benton Red, and in Illinois as Salome. Tree vigorous, hardy, spreading and productive. Blooms early-midseason. Z4. **ME Grown.**

117A Cherryfield, $30.25



The Pandemic and the Ancient Apple Tree

Ancient apple trees can be found scattered throughout much of Maine, behind old barns, by abandoned cellar holes, along roadsides, nestled in thickets, sometimes even beside a gas station or parking lot. These are the survivors, the ones that lived through the 1816 summer-that-wasn't; that lived through half a dozen famously cold test winters, including the brutal 1933-34; through the hurricane of 1938; the drought of 1947; and waves of gypsy moth, browntail moth, scab, fireblight, decades of acid rain, polluted water. As we struggle to make sense of the Covid-19 pandemic, we might look to these old apple trees for wisdom:

1. Don't move. You don't need to convince old apple trees about the value of "shelter in place." They've been perfectly content to stand in one spot for 200 years. They know that everything you need to learn is right where you are.

2. Build community. The old apple trees are masters at creating community. They know the value of deep roots. They are the ultimate collaborators and know the folly of competition. They share everything. They hoard nothing. Often I'll come across one of these old trees with perfect unblemished fruit. Never sprayed, never pruned, never fertilized, living in a tangle of grasses, goldenrod, yarrow, milkweed, elderberries, alders, even white pine. How do they do it? By being in community above and below ground in an organization too elegant and complex for humans to fully grasp: a balanced ecosystem.

3. Waste not want not. Apple trees are the true conservatives. Give them a dot of land, a scratch of soil, a few drops of water, a breath of air, and they will thrive. In times of drought, they slow their growth; in times of plenty, they put on new wood and produce great crops of fruit. They don't wreck the air and the water they use—they improve it.

4. Eat local. To old apple trees, the local food system is the only food system. They nourish themselves on what's close by. Everything around them composts: leaves, twigs, branches, bark, even old logs, uneaten fruit and the occasional squirrel or deer carcass. Nothing gets flushed down the drain or dumped. Everything stays in the local web.

5. Grace and flexibility. Give the old apple tree a heavy wet spring snow storm or a massive crop of fruit, and they bend. The occasional branch gives way and breaks to save the tree. When a hungry porcupine creates a mess up high, the tree responds with fresh young growth that in a few years will bear fruit. When the weight is finally too great, an old tree lies down—next summer one of the younger branches will rise to become a fresh new vertical trunk. The old stump eventually rots away, but the tree lives on.

Would that we all could enjoy traveling less, notice our places and our neighbors more, tend our gardens, eat local, and express grace in everything we do.

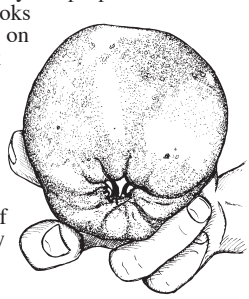
–John Bunker

A version of this essay appeared in the The Maine Organic Farmer & Gardener *(Summer 2020).*

Chestnut Early Fall. MN 240 (Malinda x open-pollinated) U Minn, 1946. A dessert crab with truly excellent fruit for fresh eating, pickles and sauce. Round 2" yellow and bronze-red apple with some russeting. Firm crisp juicy fine-grained very sweet yellowish flesh. For a growing number of people in central Maine, late September is Chestnut apple time. Always scores high at our Common Ground Country Fair taste tests. A lot of people love this apple. For a few, despite its crispness and depth of flavor, it is too sweet. Chestnut alone with no sugar makes a sweet and subtle sauce. Not a keeper, but can be stored for a month or two. Vigorous, somewhat weeping, medium-sized productive tree tends to bear annually. Disease resistant. Beautiful in bloom, mid-late season. Z3-6. **ME Grown.**

118B Chestnut on B118, $30.25

Cora's Grand Greening Fall. Unknown parentage, probably originated on North Haven Island, ME, before 1850. Very large or even huge green blocky deeply ribbed high-quality all-purpose fruit often with a brilliant pinkish-red blush. It hardly looks like an apple. More like gigantic bell peppers on a tree. It's become one of our favorites. Cook it up, or eat it fresh. It's tart and quite tasty. Brought to our attention by Becky Bartovics whose farm is defined by the tree that's been leaning downwind for more than 100 years. Not knowing if it had a proper name, Becky named it after Cora Ames, the single woman who farmed the property in the 19th c. One of many ancient Maine-island varieties that only made it to the mainland in very recent years. Incredibly rugged, long-lived and scab free. Blooms early-midseason. Z4. **ME Grown.**



119A Cora's Grand Greening, $30.25

Cortland Fall-Winter. Ben Davis x McIntosh. NY Stn, 1915. Although never as important as McIntosh, Cortland remains very popular throughout northern New England even in this era of many new introductions. Medium-large slightly ribbed dull red fruit with a purple blush. Excellent eating and cooking. Slow-oxidizing white fine-grained crisp tender juicy flesh: very good in salads. Produces a surprisingly delightful cider, fresh or fermented, in a mix or even on its own. Stores for a month or so. Vigorous tall upright spreading tree. Annual producer of heavy crops. A recent UMass study showed Cortland's resistance to apple maggot fly. Bears young; remove fruit for the first year or two to avoid stunting growth. Susceptible to scab. Blooms midseason. Z4. **ME Grown.**

120C Cortland on M111, $30.25
120E Cortland on V1, $30.25

Cox's Orange Pippin Fall. Possibly a seedling of Ribston Pippin. Near Slough, Bucks, England, around 1825. Deservedly one of the three or four most famous of all apples. Not only one of the best eating apples ever but also one of the most sought-after in modern apple breeding; parent or grandparent of many other varieties. Revered in the U.K. Medium-sized all-purpose aromatic fruit is red-orange to red with orange russet striping and wash. Perfectly balanced slightly subacid flavor and crisp juicy tender flesh improve with storage. Moderately vigorous moderately productive tree bears young and annually. Prefers cooler climates and higher pH (6.5–7.5+). The oldest Maine Cox's I know is about 40, thriving in Mercer, Zone 4. Scab resistant. Blooms midseason. Z4. **ME Grown.**

121A Cox's Orange Pippin, $30.25
121B Cox's Orange Pippin on B118, $30.25

Duchess of Oldenburg Late Summer. Russia, well before 1800. Also called **Duchess** or simply **Dutch**. Imported to North America in 1835 and named in honor of Catherine Pavlovna, Grand Duchess of Oldenburg, sister of Czar Alexander. Extremely hardy. Medium-sized round red-striped fruit is crisp, tender, juicy, subacid and aromatic. Highly recommended for all sorts of cooking, especially pies and sauce. If you live where it's cold and you're looking for one apple, this is it. Historically planted extensively wherever growers needed extreme hardiness. Still popular in Aroostook county and other northern districts. Small to medium-sized adaptable tree. Duchess seedlings, rugged and hardy, make good rootstock for grafting. Scab resistant. Does not perform well in warmer districts. Blooms early-midseason. Z3. **ME Grown.**

124B Duchess of Oldenburg on B118, $30.25

Dudley Winter Fall. Duchess x Hyslop crab. John Wesley Dudley intro, Castle Hill, ME, about 1877. Also called **Dudley** and **North Star**. Hardy Duchess-type still grown in homestead orchards and sometimes commercially in northern New England and Canada. Firm but tender, juicy aromatic subacid flesh for fresh eating and cooking. Medium-sized fruit is buttery yellow, overspread with red stripes and splashes. In appearance, less striped and more blushed than Duchess; in flavor, not quite as tart as Duchess; and, in northern areas—where it reaches its prime—Dudley will keep in the root cellar into winter. A highlight of 2017 was giving a talk at the Mapleton Historical Society, within sight of Castle Hill. Not only was it a fun evening, but it was an honor to have several Dudley descendants in the audience. Natural semi-dwarf. Blooms early-midseason. Z3. **ME Grown.**

125A Dudley Winter, $30.25

Esopus Spitzenburg Fall-Winter. Esopus, NY, before 1776. For more than 200 years "Spitz" has been a choice dessert and culinary variety, mentioned in nearly every list of best-flavored apples. Slightly subacid, crisp and juicy. Excellent acid source for sweet or fermented cider. Medium-large bright red round-conic fruit, covered with russet dots. Moderately vigorous tree with easily trained wide-angle branches. Forever famous as Thomas Jefferson's favorite apple though it vastly prefers New York and New England to Virginia. Moderately susceptible to scab though we have never sprayed ours with fungicides and the fruit has been great. Blooms mid-late season. Z4. **ME Grown.**

126A Esopus Spitzenburg, $30.25
126B Esopus Spitzenburg on B118, $30.25

Fall Pippin Fall-Winter. Possibly a seedling of Holland Pippin or White Spanish Reinette, from New England before 1750. Medium-large roundish high-quality all-purpose yellow fruit, sprinkled with a scattering of russet dots, a pronounced russet splash around the stem, and sometimes with a pinkish-red blush. Very good dessert quality. Makes a nice sauce. One of the oldest American varieties, dating from back when apples were passed around freely and no one cared much about what it was called or where it was from. The name conveyed "seedling apple that ripens in fall," but it also had more than two dozen other synonyms, including Autumn Pippin, Large Fall Pippin and Pound Pippin. Our trees are grafted with scionwood we collected at Tower Hill Botanic Garden in Boylston, MA. Fedco is now working with Tower Hill to reconstruct their entire orchard. (See page 11.) Blooms midseason. Z4. **ME Grown.**

127A Fall Pippin, $30.25

Frostbite Fall-Winter. MN 447. Parentage unknown. First fruited in 1921; named and introduced by U Minn in 2008. A massively flavored dessert apple, the one we most look forward to on our farm each fall. Likely the most distinctive, complex and unusually flavored apple you'll ever try. Astonished eaters have described it as tasting like molasses, olives, sugar cane, cheap whiskey, yogurt, tobacco juice, and so on. We love it. The aromatic crisp crystalline apricot-orange flesh, with its occasional red staining, is so juicy it might run down your hand. The roundish fruit is medium-sized and entirely covered with dark bluish-purple stripes. Lost in the dustbin of weird apples for nearly 90 years before it was finally named and released. Extremely hardy, productive and reliable; at its best in colder districts. A parent of the popular Sweet Sixteen and Keepsake, and grandparent to Honeycrisp. Blooms midseason. Z3. **ME Grown.**

130B Frostbite on B118, $30.25

Golden Russet Winter. Uncertain origin. Thought to be from England, New York or New England, before 1800. Round medium-sized russet fruit. Excellent eating; keeps all winter and well into spring. One of the best apples dried. The champagne of cider apples, ripening late in fall when the best sweet cider is ready to be made: sweet, balanced, thick and smooth. Also recommended as a sharp component for fermented cider. For more than 100 years, orchardists have been attempting to sort out the various russets. Several different apples have been called Golden Russet. Most resemble one another visually but differ in fruit qualities and tree habits. This is most likely the Golden Russet of western New York. Vigorous diverging up-curving tree with long willowy branches. Scab resistant. Blooms early to midseason. Z4. **ME Grown.**

131A Golden Russet, $30.25
131C Golden Russet on M111, $30.25

GoldRush Winter. Co-op 38 {PRI 2750-6=[Co-op 17 (PRI 1689-100) x Golden Delicious]} PRI Co-op, 1994. The first of the disease-resistant varieties from the Purdue-Rutgers-Illinois apple breeding program to have superior storage qualities. Not only that, it's probably the best-tasting apple to come out of that program. Medium-to-large round-conic fruit has uniform deep greenish-yellow opaque chewy skin that turns golden in storage. Creamy white green-flecked flesh is hard, very crisp, juicy and tart. Excellent flavor. Serve them for dessert in February and March and no one will be disappointed. Becoming very popular with cidermakers and commercial orchardists. Ripens late but successfully in central Maine. Keeps until May in the root cellar. Highly resistant to scab and powdery mildew. Moderate fireblight resistance. Blooms midseason to late. Z4. **ME Grown.**

132B GoldRush on B118, $30.25
132E GoldRush on V1, $30.25

Gravenstein Late Summer. Thought to be of Russian, Italian or German origin, before 1700. Brought to the U.S. in the early 19th c. Probably the most famous of all pie apples. Rightly so. It's great. By 1880 it was also the most popular summer apple in Maine, especially along the coast. Fruit is medium to large, irregularly round, asymmetrical, usually ribbed. Thin tender skin, striped with yellow, red and orange. Tender crisp aromatic richly flavored juicy firm tart flesh. Outstanding eating and cooking. Rated "very good to best" by Beach in *The Apples of New York*. Still commonly grown in Nova Scotia, northern California, Oregon and Washington. Large vigorous productive tree with a nearly perfect wide-angle branching habit that requires practically no training. Ripens over several weeks. Too tender for coldest areas of New England. Triploid: not suitable for pollinating other varieties. Blooms early. Z4 or 5. **ME Grown.**

134A Gravenstein, $30.25

Gray Pearmain Fall-Winter. Probably Skowhegan, ME, before 1870. Absolutely delicious dessert apple with a distinct pear flavor and firm white juicy mildly tart flesh. Steadily gaining a devoted following. Medium-sized slightly ribbed and muffin-shaped fruit has a soft opaque greenish-yellow skin with a rosy pink blush, a russet veil, and a greyish bloom. Produces excellent juice. Pick late and eat them in the fall and all winter. Until recently the only trees we knew of were at The Apple Farm in Fairfield, across the line from Skowhegan. Through the generosity of Marilyn and Steve Meyerhans, the Gray Pearmain is now grown throughout Maine and beyond. Annually bearing easy-to-grow medium-sized spreading tree. Blooms midseason. Z4. **ME Grown.**

135A Gray Pearmain, $30.25

Grimes Golden Fall. Parentage unknown. West Virginia, 1804. Tart citrusy crisp dense firm fruit is excellent for both dessert and cooking: wonderful spicy fresh eating, pies, applesauce and cider. Medium-sized roundish fruit with opaque yellow skin scattered with grey russet dots and an occasional faint blush. All-around excellent variety grown in old Maine orchards for more than 100 years. This is a perfect apple for the New England homestead north to about Bangor. An added bonus is that the fruit doesn't ripen all at once. In central Maine they begin to drop mid-October. We collect the drops and use them right up. Around Halloween we pick the bulk of the crop to store in the root cellar until late winter. Productive precocious tree. Blooms mid-late season. Z4. **ME Grown.**

136B Grimes Golden on B118, $30.25

Honeycrisp Winter. MN 1711 (Keepsake x open-pollinated) U Minn, 1991. Medium-large fruit, mottled and striped red over yellow. Sweet and juicy with hard snapping-crisp texture. Top quality in September. Improves steadily in storage. Unusual because it ripens in early fall yet keeps up to 7 months in the root cellar. First of the many excellent University of Minnesota intros to receive large-scale commercial attention, now has a huge following. Our second best-selling apple after Black Oxford. Probably best planted north of Massachusetts; less suited to warmer districts. Tends towards annual bearing. Relatively small low-vigor upright spreading tree. Above-average scab resistance. Blooms mid-late season. Z3. **ME Grown.**

137A Honeycrisp, $30.25
137C Honeycrisp on M111, $30.25
137E Honeycrisp on V1, $30.25

Hurlbut Late Fall. Unknown parentage. General Leonard Hurlbut intro, Winchester, CT, before 1848. High-quality fall dessert variety. Beach calls it "moderately firm, rather fine, tender, crisp, very juicy, aromatic, mildly subacid, good to very good." We agree. Also makes a nice loose mild pink sauce. Small to medium-sized roundish and slightly oblate fruit, largely covered with red stripes and dotted blush. With its large russet stem splash, it looks like a small Wolf River. Quite likely one of the first varieties to be grown in central and southern Maine. I've found two old trees in Waldo County. One introduced to me by local fruit explorer Bruce Brierley had collapsed to the ground decades ago and risen from the rooted branches to form a whole new tree. Keeps until early winter. Blooms early. Z4. **ME Grown.**

138A Hurlbut, $30.25

Keepsake Winter. MN 1593 (MN 447 [Frostbite] x Northern Spy) U Minn, 1979. One of the best of all winter storage varieties. Fine-textured flesh is hard, crisp, juicy and sweet. Excellent aromatic flavor, but wait about a month after picking before eating. Well named—keeps until July in the root cellar. Irregular conic medium-sized fruit is almost entirely overlaid with stripes and a wash of very deep red. Same parentage as Sweet Sixteen. Resembles Frostbite and Sweet Sixteen in appearance and taste, although the flavor is not quite as intense. Fruit size can be somewhat small. Don't be afraid to thin the crop each year 3 or 4 weeks after petal fall. You'll be happy you did. Moderately vigorous medium-sized tree reaches its prime in northern New England and the Upper Midwest. Somewhat resistant to scab. Blooms late. Z3. **ME Grown.**

140B Keepsake on B118, $30.25

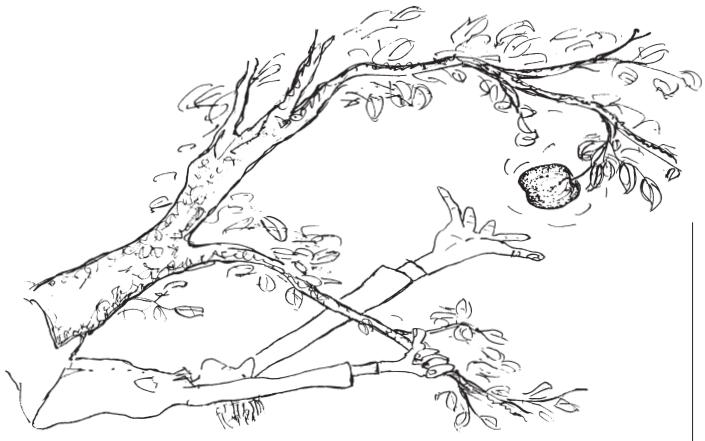
King David Fall-Winter. Chance seedling, thought to be Jonathan x Arkansas Black, Washington County, Arkansas, 1893. Stark Brothers Nursery intro, 1904. King David has a reputation as an intensely flavored apple. The initial bite is an explosion of flavors—pineapple, tangerine, lemon, sweet, sour, tart, sharp, aromatic and spicy. You may wince or moan or scream. You may see stars. Fine juicy flesh is firm yet tender and distinctly yellow. Known primarily as a dessert apple, but also good for pies and sauce. Medium-sized round-oblate-conic fruit is very dark solid maroon—nearly black. Occasionally found in old Maine orchards. The tree is vigorous, bearing young and regularly. Ripens in fall and keeps until the beginning of the year. Its one drawback is scab susceptibility. We grow it anyway. Blooms early midseason. Z4. **ME Grown.**

142A King David, $30.25

Liberty Late Summer-Fall. NY 55140-19 [Macoun x PRI 54-12 (PRI Co-op complex cross includes Rome Beauty, Jersey Black, McIntosh, Wealthy and *M. floribunda*)] NY Stn, 1978. One of the best of the disease-resistant varieties, particularly in the Northeast. Somewhat similar to Macoun. Handsome medium-sized round-conic bluish-pinkish-red apple with crisp white flesh of very good dessert quality when dead ripe. Excellent cooking and sweet cider, too. Recommended for single-variety sweet cider. Keeps till late fall. Begins fruit production at an early age, bearing consistent heavy annual crops. Naturally well-structured sturdy tree is easy to care for. Considered to be 100% scab-immune, though not resistant to insects or other lesser apple diseases. Don't let it crop too heavily at a young age. Blooms early to midseason. Z4. **ME Grown.**

144A Liberty, $30.25
144C Liberty on M111, $30.25
144E Liberty on V1, $30.25

"My first order with Fedco. Your catalogs are masterpieces. I love their information, writing style, art, and advice on how to live. I can't wait to meet the plants."
–Amy Rowe, Brooklyn, NY



Macoun Fall. NY 547 (McIntosh x Jersey Black) Richard Wellington, NY State Ag Stn, Geneva, NY, 1923. This is an apple that many New Englanders know but no one seems to know how to pronounce. (It rhymes with *town*, not *tune*!) Highest dessert quality, especially loved by those who grew up on McIntosh but now want something more. Medium-sized ribbed lobed truncate fruit, almost entirely covered with a beautiful dark purplish-red blush. The very juicy aromatic white flesh is crisp with a rich sweet flavor. Excellent for fresh eating. Large vigorous upright spreading tree. Moderately productive. Although susceptible to scab, the fruit appears to be less affected than McIntosh. Macoun also shows some natural resistance to insect damage. Blooms mid-late season. Z4. **ME Grown.**

146A Macoun, $30.25

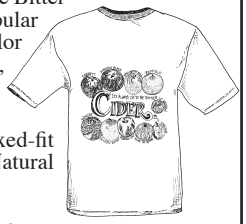
McIntosh Fall. Thought to be a seedling of Fameuse or perhaps St. Lawrence. Dundela, Ontario, 1811. First discovered by John McIntosh on his farm near the St. Lawrence River. Originally called Granny's Apple, then McIntosh Red, sometimes Gem, and finally McIntosh or simply Mac. Beginning in about 1930, the most important apple in the Northeast until Honeycrisp appeared. Although not planted in many other locations, it grows to perfection in our cool climate. There are many strains of McIntosh, some selected for traits other than flavor, and the variety has gotten a bad reputation. Despite the criticism, this is a delicious aromatic apple. Excellent for sauce but turns to soup in a pie. Annual cropper. Large beautifully rounded spreading strong tree is easy to manage. Beware, however: it's extremely susceptible to scab. It also doesn't keep well in ordinary storage. Blooms midseason. Z4. **ME Grown.**

147C McIntosh on M111, $30.25
147E McIntosh on V1, $30.25

Milden Fall-Winter. Alton, NH, before 1813. Also called **Milding** and **Winter Gravenstein**. All-purpose Baldwin-type variety popularized long ago for growing where Baldwin lacked hardiness. Still an excellent choice if you have a root cellar and are looking for the best choices for winter storage. Famous for winter pies. Large oblate-to-conic fruit mottled and splashed with bright red. The fine-textured whitish flesh, tinged with yellow, is coarse, quite juicy, sparkly, crisp and melting. Good for fresh eating and cooking. Once fairly common in northern New England and still found in old Maine orchards. Recent work by Jared Kane, executive director of Branch Hill Farm in Milton Mills, NH, and others are focusing on bringing back Milden and other traditional New Hampshire varieties. Ripens late and keeps until spring. Large vigorous tree. Blooms midseason. Z3. **ME Grown.**

148A Milden, $30.25

Fedco Cider T-shirts: "It's Always OK to Be Bitter" Celebrate your favorite fall drink with our popular cider T-shirt, featuring John Bunker's full-color paintings of ten of the most famous English, French and American cider apples. Printed in Maine at Liberty Graphics.



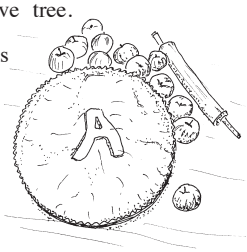
Crewneck T-shirts These are standard relaxed-fit tees. 100% organic cotton grown in the U.S. Natural off-white, except 3XL, which is white.

***L667:** Crewneck T-shirt, $22.50*
***A**: small natural* ***B**: medium natural*
***C**: large natural* ***D**: x-large natural*
***E**: 2x-large natural* ***F**: 3x-large white*

Fitted T-shirts Trim fit style with scoop neck, made from soft 100% cotton. Light-grey color, except XL, which is white.

***L668**: Fitted T-shirt, $22.50*
***A**: small grey* ***B**: medium grey*
***C**: large grey* ***D**: x-large white*

Moses Wood Late Summer. Moses Wood intro, Winthrop, ME, before 1830. An exceedingly rare central Maine heirloom, one of the last remaining Winthrop apples. Tart dessert and cooking apple, recommended for late summer pies. White tender very juicy flesh, is definitely subacid. Fruit is medium-sized, roundish to conic with distinct ribbing and a crown around the blossom end. Pink blushed and red striped. Vigorous upright productive tree. Named for the itinerant Winthrop grafter who traveled on horseback spreading apple varieties around central Maine long before the days of Fedco. Rescued by Morris Towle of Winthrop who spent much of his life tracking down and saving old Maine varieties. Without Morris Towle several would now be gone forever. He gave scionwood to Bill Reid of New Sharon who passed it along to us. Blooms midseason. Z4. **ME Grown.**

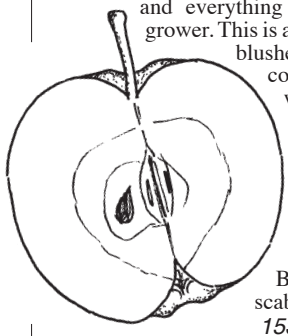


150B Moses Wood on B118, $30.25

Mother Fall. General Stephen P. Gardner intro, Bolton, MA, before 1811. Originally named American Mother. Also known as **Queen Anne** and **Gardeners Apple**. Very high-quality early-Massachusetts dessert apple. In his 1884 *The Fruit Manual*, British pomologist Robert Hogg called it, "remarkably tender, crisp, and breaking, very juicy, sweet, and with a balsamic aroma." Medium-large roundish-conic fruit, colored with muted reds and oranges and covered with tiny russet dots. We believe Mother has the potential to be popular in the 21st century on a commercial scale. General Gardner was a prominent Bolton entrepreneur on the old road between Boston and Greenfield, in what was to become the epicenter of Massachusetts orcharding. There are still almost a dozen orchards in the Bolton area. Keeps into January. Blooms mid-late season. Z4. **ME Grown.**

151A Mother, $30.25

New Brunswicker Late Summer. Thought to be a Duchess seedling. Francis Peabody Sharp intro, Upper Woodstock, NB, Canada, about 1855. An excellent all-purpose extremely hardy variety for pies, sauce and everything else. Highly recommended for the northern grower. This is among the best. Medium-sized roundish fruit, red blushed and striped with a lot of light yellow ground color showing through. Sometimes confused with Duchess and often called New Brunswick Duchess. DNA tests in 2019 indicated that our New Brunswicker is identical to Duchess. This opens up as many questions as it answers. Scionwood for our trees originally came from a tree in Houlton, ME. We love it and for now will continue to offer it. In the meanwhile, we are resuming the hunt for the true New Brunswicker. We will find you! Not susceptible to scab. Blooms early season. Z3. **ME Grown.**

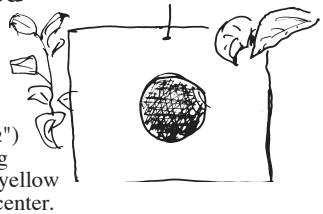


153A New Brunswicker, $30.25

Newtown Pippin Winter. Gershom Moore estate, Newtown, Long Island, NY, perhaps as early as 1700. Called **Albermarle Pippin** in the mid-Atlantic states. One of the five or ten most important and famous American varieties. Very highly recommended for dessert, cooking and cider. Large roundish green fruit with a pronounced russet splash around the stem. Keeps all winter in the root cellar. Although not historically common in Maine, it was hugely popular nearly everywhere else from coast to coast. In many locations, it still is. Sent to England as gifts to royalty; coveted by Queen Victoria. If you forced Tom Burford to tell you his favorite apple, I bet it would be Newtown. Green Newtown and Yellow Newtown are sometimes thought to be different apples although they are likely synonyms. Our scionwood comes from Tower Hill Botanic Garden, labeled as Green Newtown. Blooms midseason. Z4 or Z5. **ME Grown.**

154A Newtown Pippin, $30.25

Apple Maggot and plywood



The late Don Johnson made nifty apple maggot traps. We've gotten into doing so ourselves. In small orchards, the traps alone may be enough to reduce the AM pressure to a tolerable level. Here's how: Cut up plywood (3/8" or 1/2") into 8x11" rectangles. Drill a hole along the top edge. Paint the plywood bright yellow with a 2–3" red spot (the apple) in the center. Coat with Stiky Stuff (an adhesive found at fedcoseeds.com/ogs) and hang three in each tree in mid-June, positioning the traps at about chest height. Trim away any foliage that might stick to the trap. Check for AM flies. Now and then, when they get too gooky, scrape the traps and add new Stiky Stuff. Remove traps around Labor Day.

Northern Spy Winter. Chance seedling. East Bloomfield, NY, about 1800. One of the most famous of all heirloom apples. Very large delectable all-purpose fruit, covered with pink and light red stripes. Very juicy and tender. Even when the thin skin bruises, the fruit keeps extremely well. Cooks up quickly into a loose mild sauce. No need to remove the skins. Its reputation as a pie apple is well deserved: makes a very good single-variety pie! Recommended as a source of sharp juice in cider. Its one drawback is being slow to come into bearing, although for us it's been worth the wait. Medium-to-large moderately vigorous long-lived tree. Good scab resistance. Leafs out late and blooms late season. Z4. **ME Grown.**

157A Northern Spy, $30.25
157C Northern Spy on M111, $30.25

Opalescent Fall. George M. Hudson intro, Shultz, Barry County, MI, 1890s. Originally called Hudson's Pride of Michigan but eventually sold as Opalescent by Dayton Star Nurseries, Xenia, OH, 1899. Highly flavored dessert apple, well known among collectors. Very large brilliant deep red white-dotted fruit. Crisp, sweet, tart, juicy—but most of all supremely flavorful. Also considered a good cooking apple. Keeps till mid-late winter. Would be an excellent apple for the small commercial orchard farm stand or the CSA. Likely at its best from Massachusetts north. Our scionwood comes from an ancient broken-down tree three miles from home. Every fall I stop by to grab a few fruits. Vigorous medium-sized productive tree. Blooms midseason. Z4. **ME Grown.**

159B Opalescent on B118, $30.25

Pomme Grise Fall. Unknown origin. May have originated in Europe as early as the 17th c., and probably brought to Canada's St. Lawrence Valley by French immigrants. Found its way into Maine about 150 years ago. Medium-small russet fruit with a longtime reputation as one of the very best dessert russets. Firm, crisp, juicy, rich, subacid and aromatic, with interesting aftertastes. Very good fresh eating. The combination of the chalky russet and the green ground color give the skin its grey (grise) appearance. Recognizably different from the various Golden Russet types. Vigorous dense round spreading tree prefers northern locations. Ours has been consistently productive. Keeps fairly well, still crunchy in January. Blooms midseason. Z3. **ME Grown.**

160A Pomme Grise, $30.25

Pristine Summer. Co-op 32. (Co-op 10 x Camuzat) PRI Co-op, 1994. Medium-large disease-resistant roundish-oblate clear-yellow fruit is mildly subacid, spicy and rich flavored. Sometimes with an orange blush. Resembles Yellow Transparent and Lodi but with better fresh-eating quality. It doesn't ripen all at once—you can pick them over a week or more. Keeps more than a month in refrigeration. The eleventh variety released by the well-known PRI disease-resistant apple-breeding cooperative program at Perdue, Rutgers and Illinois universities. The original seedling is a complex cross planted in 1975 at the Purdue Horticultural Research Farm in West Lafayette, IN. From there it was selected and tested as PRI 2946 and then Co-op 32. Has since been widely tested around the U.S. and across the world, recommended for both commercial and home orchards. Resistant to most apple diseases and scab immune. Blooms mid-late season. Z4. **ME Grown.**

162C Pristine on M111, $30.25

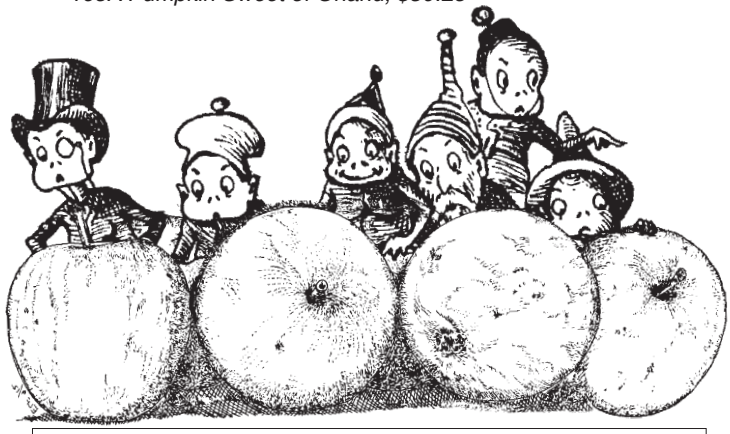
ME Grown = grown in Maine at one of our small local nurseries.

Pumpkin Russet Late Fall. New England origin, probably well before 1800. Many synonyms, including **Pumpkin Sweet** and **York Russet**. Medium-large, roundish-oblate, beautifully colored with swirls of orange, red, yellow and russet. Very sweet low-acid fruit suitable for cooking, cider, animal feed and fresh eating, if you don't mind the lack of tartness. Popular long ago in much of Maine where it was commonly known as Pumpkin Sweet. (Not to be confused with the solid red Pumpkin Sweet of Orland!) We've discovered old Pumpkin Russet trees in Penobscot, Kennebec and Waldo counties. We also heard stories of it in York County. First introduced to me by locally famous horticulturalist Roger Luce, who also introduced us to many of what became our favorite lilacs and crabapples. Our scionwood this year comes from the Tower Hill Botanic Garden collection in Massachusetts. Late blooming. Z4. **ME Grown.**

164C Pumpkin Russet on M111, $30.25

Pumpkin Sweet of Orland Fall. Probably Maine or West Thompson, CT, before 1837. Sweet apple with very low acidity introduced to me years ago by Bob Dow of Orland, ME. He knew it as Pumpkin Sweet and described the fruit better than I can: "It has a real nice, mellow, sweetish, flavor. Not a harsh apple. Real fruity—not acidic. Creamyish texture. Tasty right off the tree. You don't have to bust your gums to get into it." Also recommended for cider, apple molasses and cooking. Medium-large angular roundish-conic fruit, almost entirely rusty red and prominently speckled. Keeps until New Year. There are multiple "Sweet" red apples in Maine. Some detective work and DNA fingerprinting has now shown that Pumpkin Sweet, Wardwell Sweet and Sweet Red are all the same variety. I now think all three are all synonyms of the Connecticut apple Ramsdell Sweet. We hope to figure that out before too long. Blooms midseason. Z4. **ME Grown.**

165A Pumpkin Sweet of Orland, $30.25



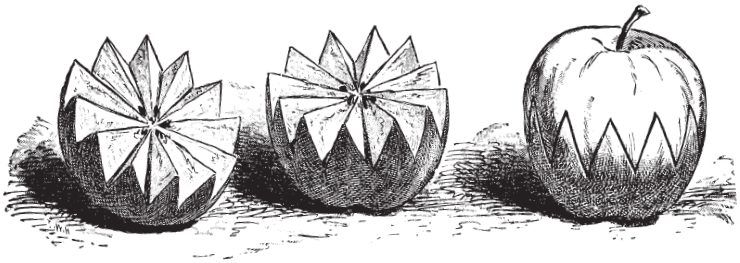
Restoring Tower Hill Botanic Garden's Orchard

In the 1930s, agriculture was saying goodbye to small scale and diversity, and large commercial orchards were replacing the orchards of the past. Traditional varieties were discarded in favor of Macs and Cortlands, Red Delicious, and a few other modern apples. Old orchards were cut down, the wood burned and stumps grubbed out. One of those delegated to rid central Massachusetts of its old orchards was Stearns Lothrop Davenport (1887-1973). Davy, as he was called (rhymes with *savvy* not *gravy*), realized that although he may be cleansing the landscape of old diseased trees, he was also killing off treasured varieties that had been nurtured for generations. As he located old varieties, he collected scionwood and grafted it to rootstock at his Creeper Hill Experimental Orchard.

Over the next few decades, in collaboration with the Worcester Horticultural Society and Old Sturbridge Village, he and others created a collection of 119 historic apples. That collection wound up at Tower Hill Botanic Gardens in Boylston, MA. Each fall they held an apple festival and each winter they sold scionwood throughout the country. Many varieties were saved that would surely be extinct. What began as one person's effort to save local apple genetic heritage became an inspiration to collectors around the world.

As the orchard grew old, the trees began to suffer from fireblight and other challenges. They had been grafted onto dwarf and semi-dwarf rootstocks, which are not long-lived. It looked as though the orchard and many classic apple varieties would be lost. Two years ago, Fedco and Tower Hill began collaborating to restore the collection. In January 2019, we cut scionwood from every tree, and our growers grafted the entire collection. The old trees were then cut down. Fedco is now the keeper of this legacy. Next spring, we will send grafted trees of 119 varieties from central Maine to Boylston on a truck. A new orchard will be planted, the collection will be restored, and the varieties will live on for many generations.

We are offering a handful of varieties from Tower Hill's collection this year, including Fall Pippin, Newtown Pippin, Washington Royal, Pumpkin Russet, Red Canada, Sheppard's Sweet and White Pippin.



Red Astrachan Summer. Thought to be from Astrakhan on the Black Sea, prior to 1800. The standard Maine summer cooking apple for generations. Still found occasionally in old Maine dooryards. Juicy rich subacid white flesh frequently tinged with red makes a highly colored sauce. Especially loved for its distinctive flavor in pies. Medium-sized somewhat oblate fruit, splashed or sometimes solidly covered with dark red. An obvious russet patch surrounds the stem. Looks like a junior version of a Wolf River. Fruit ripens over a period of several weeks in midsummer, making it perfect for the home orchard and lousy for the commercial folks who want them all at once. After finding its way to Sweden, the apple traveled to England and finally to Massachusetts in 1835. From there it quickly spread throughout New England and beyond. Keeps for a few weeks with refrigeration. Very hardy. Blooms early. Z3. **ME Grown.**

166A Red Astrachan, $30.25

Red Canada Late Fall-Winter. Probably Worcester County, MA, before 1800. Very old American variety once common in much of Maine, Bangor south. Firm, crisp, juicy, tender, aromatic: everything you want from a late-fall dessert apple. Large roundish-conic fruit, blushed dark red, striped red, and covered with large conspicuous light-colored spots. Originally called Nonsuch, later Old Nonsuch, and by the mid 19th c., Red Canada, apparently from Massachusetts growers who took it across the border. Not to be confused with an entirely different Canadian apple called Canada Red! Our scionwood comes from Tower Hill Botanic Garden. Keeps all winter. Blooms late. Z3 or 4. **ME Grown.**

167C Red Canada on M111, $30.25

Redfield Fall. Wolf River x Niedzwetzkyana. NY Stn, 1938. One of the best and largest of the red-fleshed apples. Although usually considered too tart for eating out of hand, the medium-large fruit with opaque solid rusty-red skin is absolutely great in pies, makes wonderful jelly and turns sauce and cider red. We love this apple. Gained fame in the hard-cider world thanks to the wonderful single-variety Redfield cider and Redfield blends made by the late Terry Maloney of West County Cider. Very sharp and bitter in cidermakers' lingo. (SG 1.052) Flesh is two-toned: deep pink fading to white around the core. The flowers are also two-toned, deep pink, tipped with small white lightning bolts. And the bronze-red foliage adds further interest all season. Bears young, annually, and shows some insect resistance in our trials. One of the very first to bloom each year. Z3. **ME Grown.**

168A Redfield, $30.25
168C Redfield on M111, $30.25

Rhode Island Greening Fall-Winter. Green's Inn, near Newport, RI, about 1650. Also known as **Greening**. The classic New England cooking apple. Large roundish-conic-oblate green fruit often has a tannish blush. Light yellow-green flesh is crisp and tart. Great for pies, also excellent for fresh eating. The number one green apple for a few centuries before Granny Smith arrived from Down Under and stole the show. The most well-known of the various Greenings. Because of its high-quality fruit and adaptability to a range of soil conditions, Rhode Island Greening established itself as one of the most important commercial varieties throughout the Northeast in the 19th c. Keeps well into winter. About as hardy as Baldwin. Old trees can still be found in central Maine. Not recommended for northernmost districts, but cooks everywhere else will love it. Blooms late season. Z4. **ME Grown.**

171A Rhode Island Greening, $30.25

Recommended reading:

Proceeding from the First Annual Wild & Seedling Pomological Exhibition by Matt Kaminsky. This 80-page compendium catalogs 69 wild and seedling apple and pear varieties collected and introduced by fruit explorers around North America. Stunning photographs and detailed descriptions depict a re-emergent culture of wild pome fruit. Available at gnarlypippins.com.

Ribston Pippin Fall-Winter. Ribston Hall, Yorkshire, England, about 1688. Highly recommended, richly flavored, multi-colored, partly russeted late fall dessert apple. In the words of Robert Hogg, the preeminent English pomologist of the 19th century, "There is no apple which has ever been introduced to this country, or indigenous to it, which is more generally cultivated, more familiarly known, or held in higher popular estimation than Ribston Pippin." One should never assume an English apple will do as well in the U.S., but Ribston is an exception. It was brought to Kennebec County about the time of the Revolution and then became one of the state's most important apples. *Maine Farmer* reported in 1854 that Ribston "does better in Maine than any where in the U.S." Also well known as the parent of the even more famous Cox's Orange Pippin, as well as of Starkey, one of my all-time favorite Maine apples. Blooms midseason. Z4. **ME Grown.**

172A Ribston Pippin, $30.25

Rolfe Early Fall. Blue Pearmain seedling. Abbot, ME, about 1820. First called Macomber. Medium-sized round rosy-red striped and blushed fruit. Firm, sweet, mild and beautiful. Excellent fresh eating and cooking. A good alternative for those who love McIntosh but don't want to deal with scab. We never spray fungicides and we get excellent fruit. Popular in the 19th century in most cold regions of Maine, filling the fall niche before Mac's rise to fame. Our scionwood originally came from Sweetser's Orchard in Cumberland Center. Their ancient tree was finally cut down a few years ago after many decades of service and replaced by several young Rolfe trees grafted by Fedco! Keeps through the fall. Blooms midseason. Z4 or maybe Z3. **ME Grown.**

173A Rolfe, $30.25

Roxbury Russet Winter. Roxbury, MA, early 1600s. Said to be the first named American apple variety. One of the best late-winter dessert apples—it would be hard to live without a stash of them in our root cellar. Our favorite for winter sauce. Hard medium-large patchy green and russeted fruit not uniform in size, shape or color. Rich, spicy and juicy. Exceptional sauce. Dried, it's nice and tart with a pleasant first sensation and a lingering good aftertaste. The aromatic juice has potential for cider, fresh or fermented. Medium-to-large vigorous spreading tree. One of the most popular commercial apples of the 19th century, largely because it can store until summer. Scab resistant. Blooms midseason. Z4. **ME Grown.**

174A Roxbury Russet, $30.25
174C Roxbury Russet on M111, $30.25

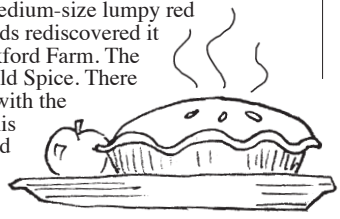
Rubicon Winter. Paw Paw, MI, 1858. Also known as **Paw Paw**. Firm fine-textured tender juicy subacid all-purpose fruit for fresh eating. Also makes an excellent pie. Medium-large roundish-oblong rusty red striped fruit. We learned about Rubicon from Liz Lauer of Penobscot County, north of Bangor. Liz received her grafting scionwood from Belinda Toby of nearby Lakeville. Belinda said her relatives moved to Michigan generations ago and sent scions back to her great grandfather, Charles Boyce, who most likely grafted the family's ancient tree. According to Belinda, it's a "wonderful keeping apple...it freezes well...the goats even tried to kill it…it's just a fine apple." The family sent scions years ago to Sturbridge Village in Massachusetts where it was added to their heirloom collection. Extremely hardy. Probably blooms midseason. Z3. **ME Grown.**

175C Rubicon on M111, $30.25

Sheppard's Sweet Fall. Windham County, CT, before 1857. Exceedingly rare. Medium-sized roundish light yellow fruit with pinkish stripes and blush. We know very little about the variety except that the tender pleasant low-acid sweet fruit was formerly recommended for "kitchen use." Probably also has potential for fermenting. The only remaining two trees may have been those at Tower Hill Botanic Garden. Those are now gone. We propagated trees from the Tower Hill collection to help keep it from extinction. We will now grow it at the Maine Heritage Orchard and elsewhere. You might want to as well. Uncertain bloom time. Probably Z4. **ME Grown.**

176B Sheppard's Sweet on B118, $30.25

Spice Sweet Late Summer. Massachusetts, early 1800s. One of the best of all pie apples. Well named. The orangey-colored cooked fruit actually is sweet and spicy. Relatively low in acid, unusual for a pie apple. Most sweet apples are unsuitable for pies, but Spice Sweet is exceptional. Very good fresh eating as well. Medium-size lumpy red fruit resembles Northern Spy. Laura Childs rediscovered it in 2011 in Belgrade, ME, on the old Bickford Farm. The Bickford grandparents always called it Old Spice. There are historical records of multiple apples with the name Spice Sweet or Spice Sweeting. This one is likely the Spice Sweeting described by Dr. John Warder in 1867. Blooms midseason. Z4. **ME Grown.**

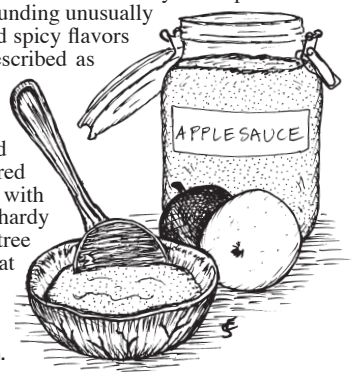


177A Spice Sweet, $30.25

Stark Winter. Delaware County, OH, about 1850. All-purpose winter storage variety that keeps in the root cellar until April. Large blocky dull reddish-green fruit, sometimes confused with Baldwin. Hardier than Baldwin. Commonly grown commercially in northern districts 100 years ago. Many trees can still be found in central Maine. Not of Baldwin dessert quality, but very good for cooking and drying. Ruth Smith from York Harbor wrote to me years ago about Stark: "I was always amazed at the color and thickness of the applesauce. I had to add a lot more water than the usual apple needed. It was very tart."According to Hedrick in his *Cyclopedia of Hardy Fruits*, the tree is "vigorous, hardy, healthy, productive, and very accommodating as to soils." Keeps until spring. Not to be confused with the Maine apple Starkey or Missouri's famous Stark Bro's Nursery. Midseason bloomer. Z4. **ME Grown.**

179A Stark, $30.25

Sweet Sixteen Fall. MN 1630 (MN447 [Frostbite] x Northern Spy) U Minn, 1979. The first bite into a Sweet Sixteen is always a surprise. Fine-textured crisp flesh contains an astounding unusually complex combination of sweet, nutty and spicy flavors with slight anise essence, sometimes described as cherry, vanilla or even bourbon. We always love Sweet Sixteen season. Truly excellent fresh eating, although it is too sweet for some palates. Also good for pies and sauce. Round-conic bronze-red medium-sized fruit, striped and washed with rose-red. Annual bearer if thinned. Very hardy moderate-sized vigorous vase-shaped tree grows upright with willowy branches that get loaded with fruit but do not break. Best grown in northern districts. Keeps till midwinter. Some resistance to scab. Blooms mid to late season. Z3. **ME Grown.**

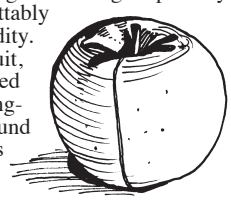


180A Sweet Sixteen, $30.25
180B Sweet Sixteen on B118, $30.25

Tater House Fall-Winter. Unknown parentage. New Sweden, ME. Extremely hardy volunteer seedling discovered in 1998 growing on the earthen berm beside a potato storage house in northern Maine. Large perfectly shaped beautiful red-violet fruit. The smooth and shiny skin is reminiscent of a ripe eggplant. Somewhat ribbed, but the overall appearance is round. Decidedly tart but excellent fresh eating by late September. The flavor improves right into January. Does not cook down quickly but makes a very decent sauce. Skins have a nice flavor. Not a single-variety pie apple though could be good in a blend. We grafted it at our place and it has been fruiting now for several years. Cammy said, "I love them. They're delicious." Chris Drew, another fan and former head ranger at Baxter State Park, named it. Keeps remarkably well. No scab. Blooms mid-late season. Z3. **ME Grown.**

182A Tater House, $30.25

Tolman Sweet Fall-Early Winter. Sweet Greening x Old Russet. Dorchester, MA, before 1700. Sometimes called **Talman Sweet**, **Taulman Sweet**, **Tomey Sweet** and many variations. One of the first American apples and one of the few to remain popular for centuries. Truly an all-purpose fruit, used for cider, cooking, dessert and even animal fodder. Once popular for pickling, boiling and baking. Especially prized in Maine for apple cake. Unforgettably peculiar sweet strange flavor. Very low acidity. Moderately juicy medium-sized greenish fruit, sometimes with a bit of a blush and often marked by a suture line running from stem to stern. Long-lived heavy-bearing vigorous tree. Still often found throughout central and southern Maine. Blooms midseason. Z4. **ME Grown.**



183A Tolman Sweet, $30.25

Trailman Summer. Trail x Osman. Beaverlodge Research Farm, Alberta, Canada, 1973. In spite of its small size, this is an exceptionally delicious fruit for fresh eating. Spicy sweet crisp crunchy golden-yellow flesh. Visitors who try it in our orchard usually fall in love with it instantly. Some have called it the best summer apple they've ever tasted—some even call it their favorite apple of any season! Ripens around Aug. 20 in central Maine. Translucent yellow skin has a porcelain finish, white bloom and sometimes a brownish-red blush. Fruit the size and shape of an egg. Hangs on the tree for 2 weeks without softening. Precocious, annually productive, moderately vigorous, somewhat drooping and spreading tree. Exceedingly hardy. Might be tasteless south of Zone 6. One of the first to bloom each year. Zone 3 or even 2. **ME Grown.**

184B Trailman on B118, $30.25

Wagener Winter. Unknown parentage. Penn Yan, NY, 1791. Midwinter all-purpose storage variety widely grown in Maine during the 19th and early 20th c. Bright medium-sized blocky angular ribbed roundish yellow fruit mostly covered with a red blush of dots and stripes. Fine-grained, crisp, tender, very juicy, subacid, aromatic and sprightly. Naturally small tree was traditionally planted as a filler between large standard trees. The Wageners would fruit young and eventually be removed when the big Baldwins kicked in. Precocious annually bearing tree produces very heavily. The fruit lines up along the branches so thickly you've got to look hard to see any wood. Blooms midseason. Z4. **ME Grown.**

186A Wagener, $30.25

Washington Royal Winter. Originated on the farm of Joseph Hayward, Sterling, MA. Introduced later by Ephraim Robbins, Leominster, MA, before 1855. Very rare. Whitish flesh is crisp, tender, juicy and subacid. Recommended for fresh eating. Medium-large angular roundish-oblate fruit is greenish-yellow, white-spotted and orange-blushed. Often presents netted russeting. Probably dates to well before 1850, maybe even to the time when our first president was considered by some to be royalty. Another variety rescued from the Tower Hill Collection. Blooms midseason. Z4. **ME Grown.**

187A Washington Royal, $30.25

Wealthy Fall. Thought to be a seedling of cherry crab, but recent DNA analysis proves old history wrong: one parent is Duchess. Excelsior, MN, 1860. A Maine native of sorts, the seed having come from Bangor. One of the most famous of all hardy varieties, with its perfect texture and complex flavors, all-purpose Wealthy is considered to be one of the best apples. We agree. Round-oblate medium-sized fruit is pale greenish-yellow streaked with carmine. Tender very juicy sweet subacid flesh is white, often stained red. About as firm as McIntosh. Good eating and even better cooking. Wonderful pies! Good acid source for fermented cider. Ripens over a long period. Productive moderately vigorous long-lived naturally small-statured tree. Blooms early. Z3. **ME Grown.**

188A Wealthy, $30.25

"It means so much to know that we can still count on planting to increase our long term resilience and short term sanity!"
–Corie Washow, Durham, ME

Westfield Seek-No-Further Fall. Westfield, MA, mid-18th c. One of the most famous of all heirloom dessert apples. Still loved by anyone who knows it. A Hudson River grower of 200 varieties declared it "the best apple in the world." Medium-sized roundish-conic fruit is dull rusty red, yellow, conspicuously dotted and sometimes russeted. Highly flavored, rich, a little bit sweet, a little bit sour, firm, crisp and juicy. It has everything. *The Apples of New York* calls it "rich, sometimes astringent, peculiarly aromatic, sprightly, very good to best." Also an outstanding drying apple. Keeps until early winter. Hardier tree than Baldwin. Michael Clark provided our scionwood from his beautiful broken down ancient tree in Knox, ME. Blooms midseason. Z4. **ME Grown.**

189A Westfield Seek-No-Further, $30.25

White Pippin Winter. Possibly from Virginia or Canada before 1800. Also known as **Canada Pippin**, **White Ohio Pippin**, and **American White Winter Calville**. Extremely rare. Beach recommended it for "home use or general market purposes," describing the flesh as "slightly tinged with yellow, firm, moderately fine-grained to a little coarse, tender, crisp, juicy, sprightly sub-acid." Large roundish conic greenish white fruit with a reddish blush and a short stem. Should keep quite well in the root cellar. Probably little-known in Maine but more common in southern New England. This is another of those impossibly vague names that might apply to any number of apples. Our scionwood from Tower Hill Botanic Garden. Blooms midseason. Z3 or 4. **ME Grown.**

190A White Pippin, $30.25

Wickson Fall. Esopus Spitzenburg x Newtown Pippin. Albert Etter intro, Humboldt County, CA, 1944. One of the most intensely flavorful apples we list. Small roundish bright red fruit is crisp, juicy, tart, tangy and spicy. Highly recommended for dessert. Extremely high in both sugar and acid. Sugar level of the juice is around 25%. Becoming one of the most sought-after American cider apples. Makes perfect single-variety cider—the best there is! In September the tree looks like a mass of cherries. Bred and introduced by the generally unknown Albert Etter, one of America's most innovative and important fruit breeders of the 20th century. Keeps until January. Wickson bears young, heavily and most years. Blooms midseason. Z4. **ME Grown.**

191A Wickson, $30.25
191C Wickson on M111, $30.25

Hot off the Press!

Apples and the Art of Detection: Tracking Down, Identifying and Preserving Rare Apples by John Bunker, 2019. 407 pages, softcover. I've been listening to John Bunker talk about apples for as long as I can remember. The old varieties and why we should rescue them, the Johnny Appleseeds of America, and the shocking truth that you can't plant an apple seed and expect to get the same apple (gasp!). Because I'm an editor, I had the honor of contributing to my brother's masterpiece: *Apples and the Art of Detection*. I realized right away that this book, brilliantly framed as a Sherlock Holmes detective story, belongs not only on the shelf of anyone interested in apples; it is also for those who want to learn about the old-timey experts behind the scenes. In other words, John's mentors. We are introduced to these salt-of-the-earth characters and their apple orchards, and we fall in love with all of them. As a layperson, I especially enjoyed those sections, but I was also impressed with the precision and eloquence with which the science is presented. *Apples and the Art of Detection* has photographs and artwork galore, and is beautifully illustrated by the author himself. –Emily Bunker

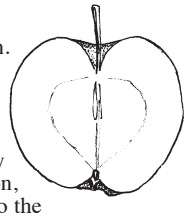
L669A Apples and the Art of Detection, $30.00

The Apples of New York by Spencer Ambrose Beach, 1905. 2-volume set, 764 pages, hardcover. This two-volume encyclopedia of apples grown throughout the U.S. before 1900 is an essential text for apple enthusiasts. I refer to Beach almost every day of the year. Don't be misled by the name—it's not just about New York. Although it misses many of our obscure local varieties, Beach covers hundreds of the most important historic varieties you'll come across. It's not a searchable key, but it is fantastic with good-to-excellent histories, detailed descriptions and color images. Volume one includes a general history of apples and an explanation of relevant terminology related to apple identification. Original sets of *The Apples of New York* are still out there although prohibitively expensive for most folks. We're offering a very decent hardcover reprint—good for those who want to go easy on their first editions, and great for those who can't lay out the big bucks for an original. No need to wait until spring to receive *The Apples of New York*. We'll ship it within a few weeks of receiving your order. –John Bunker

L670A The Apples of New York, $175.00

Williams Pride Summer. Co-op 23 [PRI 2845-1=(PRI 1018-101 x NJ50)] PRI Co-op, 1988. Probably the most popular summer apple among PRI's disease-resistant introductions. It's actually crisp, which is rare for a summer apple. Deep purple roundish-conic irregularly shaped fruit highlighted with areas of glowing rosy red and covered with a thin bloom. Light cream-colored flesh with red staining just under the skin. Firm, crisp and very juicy. Has a nice acidic blend of tart and sweet, reminiscent of Fameuse. Long ripening period means you don't have to eat them all at once. Vigorous annually bearing tree with some biennial tendency. Well shaped with strong right-angled branches that do not require careful training. Highly resistant to fireblight, cedar apple rust and sooty blotch; resistant to powdery mildew. Scab immune. Blooms early to midseason. Z4. **ME Grown.**

192B Williams Pride on B118, $30.25

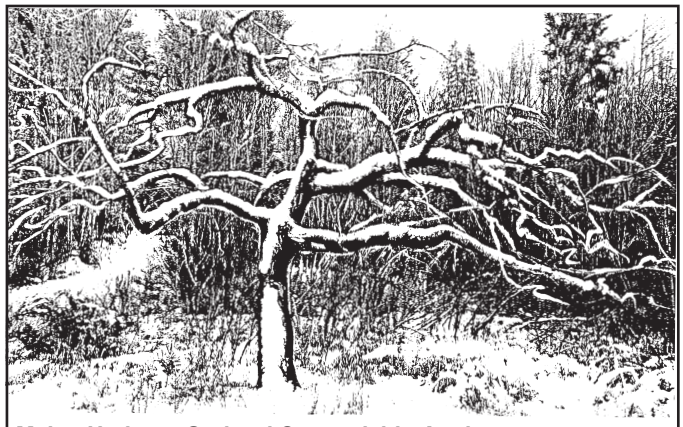


Windham Russet Late Fall. Parentage unknown. Massachusetts before 1870. Excellent dessert apple for the connoisseur. The darkish brown russet skin has a distinctly bumpy rough texture, unlike any other russet we know. The stem area is sometimes lipped like Pewaukee. We brought it to the Franklin County CiderDays apple tasting in November 2013 and it won, beating out some really great apples. First brought to the attention of the Maine Pomological Society by DJ Briggs in 1885. ZA Gilbert, longtime president of the society, struggled to identify the apple. His best guess was Windham Russet. He wrote, "I have spent much time in search of a pointer to the identification of this variety. So choice a russet is worthy of attention." We agree. Said to be from Massachusetts although there is no Windham down there. Maybe it's the Windham in Connecticut, New Hampshire, Vermont or Maine. This apple is making a big comeback. Blooms midseason. Z4-7. **ME Grown.**

193A Windham Russet, $30.25

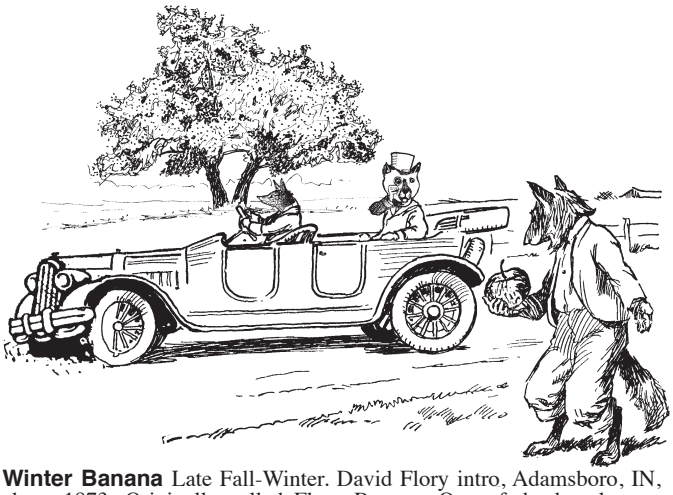
Winekist Summer. Unknown parentage. Carl A. Hansen intro, Brookings, SD, 1949. Medium-sized fruit is wine red with patches and stripes of darker red and very small white dots. Flesh is even deeper red than Redfield. The very juicy coarse flesh is almost solid beet red. Very good—though extremely tart—flavor, makes a colorful and flavorful addition to fresh cider or sauce. Good fresh eating for those who like it tart. We have not fermented it, though it would be worth testing. For many years I assumed that the apple was the creation of the Winthrop, ME, fruit explorer and collector, Morris Towle. Dan Bussey's research has straightened that out. It must have come back east shortly after its introduction. Leaves are tomentose (soft and woolly) and have a dark reddish cast. Blossoms are light pink. Tree is a natural semi-dwarf. Blooms midseason. Z3. **ME Grown.**

194C Winekist on M111, $30.25



Maine Heritage Orchard Stewardship Apple The Maine Organic Farmers and Gardeners Association (MOFGA) established the Maine Heritage Orchard in a renovated gravel pit in Unity. The terraced polyculture orchard will be unlike any orchard anywhere. Nearly 300 apple trees have been planted so far with many more to come. You can join in this effort by becoming an Apple Steward. By purchasing a Heritage Orchard Stewardship Apple, you become the proud keeper of one of the varieties represented in MOFGA's orchard. In the event that the orchard's tree dies, you'll have the backup so we can collect scionwood for grafting another. We'll send you a historic apple tree with a description if it's not listed in this catalog, and a form to fill out. After planting your tree, you return the form with the tree's location to MOFGA. MOFGA will contact you from time to time. $30 from the sale of each tree goes to support the Maine Heritage Orchard (MeHO) project. For more information go to mofga.org. All trees best grown from Z4-6. **ME Grown.**

267A Stewardship Apple, $50.00



Winter Banana Late Fall-Winter. David Flory intro, Adamsboro, IN, about 1873. Originally called Flory Banana. One of the best-known old-time apples, possibly because of its catchy name. The large brilliant banana-yellow fruit is somewhat conical and somewhat ribbed—sometimes with a suture line and usually with a pronounced red blush. The yellowish flesh is aromatic, slightly crisp, juicy, mild and very good for fresh eating and sauce. Some say the flavor or aroma resemble the ubiquitous *Musa* 'Dwarf Cavendish' banana you can buy in every grocery store in America, although there appears to be no record as to what David Flory was thinking when he named it. With its potent and reliable pollen, it's often planted in the Washington State orchards as a "pollenizer" for Red Delicious and other commercial varieties. Blooms midseason. Z4. **ME Grown.**

196A Winter Banana, $30.25

Wolf River Fall. Alexander seedling. Near Wolf River, WI, 1875. Perhaps the most famous old-time apple in Maine, likely due to its catchy name and its extremely large—even huge—round-oblate fruit. Pale yellow-green skin mostly covered with pink, deep red and bright crimson with a vivid yellowish-greenish russety splash around the stem. Creamy-white coarse flesh is firm but tender. Aromatic subacid flavor is very good for cooking. Makes an excellent baked apple and a decent pie. Not much good for fresh eating, but particularly tasty when dried. Keeps until late fall. Large moderately vigorous productive spreading tree. Excellent scab resistance. Blooms mid to late season. Z3. **ME Grown.**

198A Wolf River, $30.25

Yellow Bellflower Winter. Parentage unknown. Crosswicks, NJ, about 1742. Large conical pure-yellow fruit does everything well, including keeping all winter in the root cellar. Firm, crisp, moderately fine-grained, rather tender, juicy, aromatic, very good for culinary use and good for fresh eating, especially after it's mellowed for a month or two. Excellent for pies. Applesauce cooks quickly, somewhat coarse, bright glistening yellow with great flavor and chewy skins. We also love it dried: it's balanced and flavorful. One of the first named American varieties and one of the first apples to be grafted and planted in Maine. Incredibly long-lived. When you find a truly ancient apple tree in Maine, there's a pretty good chance it's a Yellow Bellflower. Blooms early-midseason. Z4. **ME Grown.**

199A Yellow Bellflower, $30.25

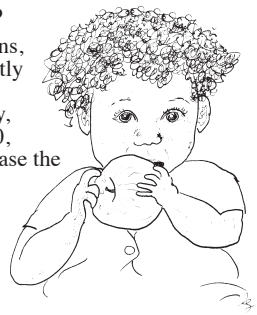
Yellow Transparent Summer. Parentage unknown. Russia, probably before 1800. Brought to the U.S. in 1870 and quickly spread throughout Maine. One of our most-requested varieties. Medium-sized light yellow fruit has a tender skin you can almost see through. Tart fresh eating and cooks up into a flavorful slightly tart light yellow sauce in 6–7 minutes. Skip the sugar. Skins will dissolve in your mouth as you eat. Transparents ripen fairly early in August and beware: they come mostly all at once and go by quickly. Get the sauce pot ready and don't blink or you might miss them. It's okay to eat or cook them a little on the green side. When the first of them fall to the ground, pick the rest within a week or so. Incredibly hardy. Blooms midseason. Z3. **ME Grown.**

200A Yellow Transparent, $30.25

Zestar Late Summer. (State Fair x MN 1691) U Minn, 1999. Also called **Zestar!** Extremely hardy high-quality mid-late summer dessert apple. Medium-sized blocky round fruit covered with red stripes and blush. Juicy and crisp with a well-balanced acid-sweet flavor. Michael Phillips, New Hampshire orchardist and author of *The Apple Grower*, said to me, "When you tree-ripen Zestar, it's fabulous." Northern Maine orchardist Steve Miller added, "That's an impressive apple. From the standpoint of appearance and quality, they're first rate." Keeps in cold storage up to 7 weeks. Tree has moderately vigorous upright form; excellent horizontal branching habit makes it easy to train and prune. Precocious and annual-bearing. Blooms early season. Z3. **ME Grown.**

201B Zestar on B118, $30.25

Where can I taste that apple?



While we take pride in our variety descriptions, there's nothing like the real thing. Frequently we're asked, "Where can I taste a…?" One opportunity is Great Maine Apple Day, tentatively set for Sunday, October 18, 2020, at MOFGA in Unity. (Check mofga.org in case the event is canceled due to Covid-19.)

To try more than 20 varieties, sign up for Out on a Limb Apple CSA (outonalimbapples.com) co-managed by Fedco's John Bunker. Members receive biweekly shares of rare apples.

Visit an orchard near you. There are many great orchards out there. Even one or two rare finds can be worth the trip. Below are some Maine orchards with good collections. For a more complete list of Maine orchards, go to maineapples.org.

For a longer list of orchards around the northeast, visit fedcoseeds.com/trees and click on "Resources."

Some orchards in Maine:

- The Apple Farm, Fairfield, Somerset County (207) 453-7656, applefarm.us. A great collection of unusual old and new varieties.
- Bailey's Orchard, Whitefield, Lincoln County (207) 549-7680. One of the largest collections of old varieties in the state. Other fruits, too.
- Cayford Orchards, Skowhegan, Somerset County (207) 474-5200, cayfordorchards.com. 57 new and heirloom varieties of tree fruits.
- Clayfield Farm, East Blue Hill, Hancock County (207) 374-2159, clayfieldfarm.net. Small organic orchard of mixed varieties.
- Doles Orchard, Limington, York County (207) 793-4409, dolesorchard.com. Mix of old and new. They have two un-named varieties crossed by the late Maine plant breeder Russell Bailey. Both are extremely rare, if not unique.
- Lane Road Orchard, New Sharon, Franklin County (774) 265-0614. Many interesting heirlooms and unusual modern varieties.
- McDougal Orchards, Springvale, York County (207) 324-5054, mcdougalorchards.com. Many unusual apple varieties.
- Maine-ly Apples, Dixmont, Penobscot County (207) 234-2043, mainelyapples.com. Excellent collection of old, new and rare varieties.
- North Star Orchards, Madison, Somerset County (207) 696-5109, northstarorchards.me. Pick-your-own apples, cider mill, and farm store.
- Pietree Orchard, Sweden, Oxford County (207) 647-9419, pietreeorchard.com. Excellent assortment of heirloom and new varieties.
- Pleasant Pond Orchard, Richmond, Sagadahoc County (207) 737-4443, pleasantpondorchard.com. Apples, pears, plums, peaches, blackberries and pick-your-own highbush blueberries.
- Ricker Hill Orchards, Turner, Androscoggin County (207) 225-5552, rickerhill.com. Organic apples and more, mostly modern varieties.
- Rollins Orchard, Garland, Penobscot County (207) 924-3504, rollinsorchards.com. More than 20 unusual old varieties.
- Sewall Orchard, Lincolnville, Waldo County (207) 763-3956, sewallorchard.com. Organic apples including some of the first disease-resistant releases.
- Sweetser's Apple Barrel and Orchards, Cumberland Center, Cumberland County (207) 829-6599, maineapple.com. A great collection of 39 old and new varieties. Don't miss their Rolfe apples.

Heirloom Apple Collections

A bundle of 5, 10 or 25 trees to begin your own heirloom orchard. Each tree in the bundle will be a different heirloom traditionally grown in northern New England. Collections may include varieties not listed in this catalog. Rootstocks will be semi-dwarf and standard. Trees are individually labeled within each bundle. Sorry, collections are not customizable. Please note that purchasing a bundle of 25 will qualify your order for a 15% discount if you order by the discount deadline. See order form, page 35, for details. All hardy to Z4. **ME Grown.**

222A Heirloom Apple Collection, bundle of 5, $136.00
222B Heirloom Apple Collection, bundle of 10, $257.00
222C Heirloom Apple Collection, bundle of 25, $605.00

Cider Apples

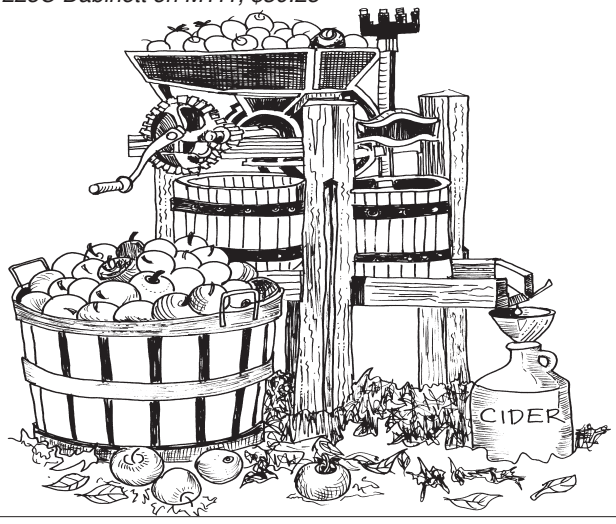
Each year we offer a different assortment of the best European and American cider varieties. Many of these are NOT for fresh eating. They do however possess qualities that make them very desirable for fermented cider production. Please note the descriptions for details. We also offer crabapples suitable for cider; see pages 44-45.

Chisel Jersey Late Fall. **Full bittersweet** cider apple. Martock, Somerset, England, 19th c. One of the most famous of the Somerset bittersweets. Best blended with other apples, it makes a strong rich cider. Medium acidity, highly astringent, harsh and high in tannins. (SG 1.068, acidity 2.2g/L, tannin 4g/L) Round to slightly conic slightly greasy fruit, colored with a beautiful combination of dull opaque reds, yellows and russets. In old English *chesil* means 'pebble'—Chisel Jersey is small, hard and bitter! Spreading tree may require encouragement to develop a strong central leader. Consistent cropper. Closely related to Dabinett; they should not be relied on to pollinate one another. One source recommends Harry Masters Jersey as a good companion for pollination, but as usual, most other apples should do the job. Late bloomer. Z4. **ME Grown.**

223C Chisel Jersey on M111, $30.25

Dabinett Late Fall. **Medium-bittersweet** cider apple. Probably a seedling of Chisel Jersey. Middle Lambrook, Somerset, England. One of the most popular cider varieties in Somerset today and one of the mainstays of Poverty Lane Cider Orchards. At a MOFGA workshop, Steve Wood of Poverty Lane and Farnum Hill Ciders said, "If you're going to plant one bittersweet, plant this one." Sugar content fair and fermentation moderate. High-quality well-balanced low-acid cider with a soft-tasting tannin. (SG 1.057, acidity 1.8g/L, tannin 2.9g/L) Medium-sized roundish fruit covered with brownish brick-red stripes and blush. Picked last week of October, usually blended with other late varieties. Crops annually. Grower-friendly tree with flat lateral branches may require help in developing a strong central leader. Not pollen compatible with Chisel Jersey. Midseason bloom. Z4. **ME Grown.**

225A Dabinett, $30.25
225C Dabinett on M111, $30.25



It's All in the Mix!

"From the great diversity of soil and climate in the United States of America, and the almost endless variety of its apples, it followed that much diversity of taste and flavor will be necessarily found in the cider that is made from them." –Colin MacKenzie, 1829

For the best cider, plant several varieties. That's because when it comes to cider, it's all in the mix. Unlike beer, cider usually has only one ingredient: apples. They provide everything: acidity, sugar, tannin and flavor.

We classify the cider varieties into four categories: **sharp** (low in tannins, high in acid), **sweet** (high in sugar, little or no tannin, low acid), **bittersharp** (high in tannins and high acid) and **bittersweet** (high tannins and sugar, low acid). **Tannin** denotes naturally occurring compounds whose bitter astringency gives rounded full flavor, body and golden color. What's the difference between bitterness and astringency? An excellent University of Reading publication *Sustainable Cider Apple Production* attempts to define them: "Astringency is a drying, puckering sensation in the mouth in which the whole tongue is affected, while bitterness is mostly perceived at the sides and back of the tongue."

Vintage refers to varieties with perfect qualities for single-variety cider. Most cider is best blended.

We recommend you plant some sharp apples for acidity, some sweet apples for sugar and some bitter apples for the tannin. Our best cider has been from about 40% bittersweet (astringent) apples and 60% mixed dessert and cooking apples.

Ellis Bitter Early Fall. **Medium bittersweet** cider apple. Newton St Cyres, Devon, Somerset, England. Particularly useful for its early ripening, adding valuable bitterness to early-season cider pressings. (SG 1.033–1.053, acidity 2g/L, tannin 2.4g/L) Blend with other early dessert apples or cider varieties. Large oddly conic fruit, sometimes ribbed, mostly striped and blushed with red. White-fleshed, sweet, crisp and juicy. Soft, astringent, tannic. Still grown in England's West Country cider orchards and now being planted in the U.S. Fast-growing large upright rangy open vigorous tree produces regularly. Midseason bloomer. Z4. **ME Grown.**

226C Ellis Bitter on M111, $30.25

Fuel Service Fall. **Bittersweet** cider apple. Cammy Watts and John Bunker intro, Palermo, ME, 2015. Medium juicy, medium crisp and high in tannins. Begins to oxidize moments after cutting or grinding. (SG 1.062) Small 2" yellow fruit sometimes with a faint blush. Discovered on a fruit exploring mission in Hancock County, ME, in the fall of 2015. The small roadside wild seedling tree was loaded so we had to stop. Boy were we happy. You will be, too. Recommended for trial—we're liking it so far. Uncertain bloom time. Probably Z4. **ME Grown.**

227C Fuel Service on M111, $30.25

Gnarled Chapman Fall. **Bittersweet** cider apple. Parentage unknown. Eric Shatt intro, Hector, NY, 2015. Large, roundish-oblate and outrageously beautiful. Yellowy-green skin with a glowing orange blush, netted and dotted with russet. Eric named this seedling in honor of America's most famous apple guy, John "Appleseed" Chapman. Look for it blended into Eric's Redbyrd cider. Vigorous upright tip-bearing tree. Recommended for trial in all cider-apple growing districts. Blooms midseason. Z4. **ME Grown.**

228C Gnarled Chapman on M111, $30.25

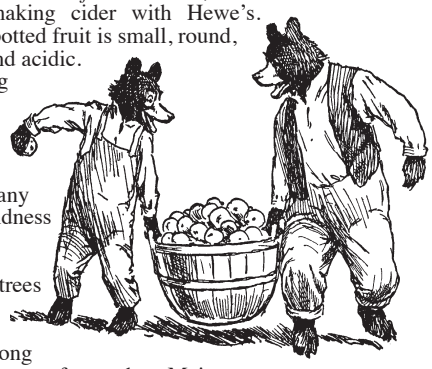
Harrison Mid-Late Fall. **Vintage sharp** cider apple. Parentage unknown. South Orange, Essex County, NJ, as early as 1712. One of the most renowned American cider apples, dating from the early days of domestic cidermaking. Harrison cider was famous and considered to be better than champagne. Medium-small oval yellow-skinned fruit. Rich firm dry yellow flesh. According to William Coxe in 1817, it makes a "high coloured, rich, and sweet cider of great strength, commanding a high price in New-York, frequently ten dollars and upwards per barrell." Vigorous productive tree. A Harrison revival is underway in several locations on the East Coast. Performing well in our central Maine trials. Appears to be plenty hardy. Z4. **ME Grown.**

229A Harrison, $30.25
229C Harrison on M111, $30.25

Harry Masters Jersey Fall. **Medium-full bittersweet** cider apple. Often called Port Wine in north Somerset. Probably introduced by Harry Masters, Yarlington Mill, Woolston, Somerset, England, before 1900. High-quality bittersweet variety recommended for blending with other fall varieties. Soft astringent tannic. (SG 1.056, acidity 2g/L, tannin 3.2g/L) Becoming popular commercially in New England in recent years. One of the mainstays of Farnum Hill Cider. Medium-large oblate-conic fruit, mostly covered with bright red stripes and blush, and a splash of yellow russet around the stem. Narrow upright tree form. Harry Masters himself was the miller at Yarlington Mill. Harry Masters Jersey and Yarlington Mill are thought to be of the same parentage. Blooms midseason. Z4. **ME Grown.**

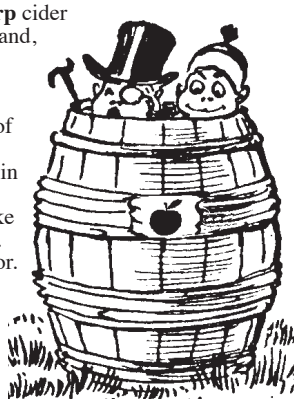
230A Harry Masters Jersey, $30.25
230C Harry Masters Jersey on M111, $30.25

Hewe's Virginia Crab Fall. **Sharp** cider apple. Probably a seedling of the native *M. angustifolia*, the Southern Crab. Introduced about 1700 in Virginia. One of the most prized of all American cider apples. One of the rare varieties recommended for single varietal cider. In his 1817 *A View of the Cultivation of Fruit Trees*, William Coxe devoted an entire chapter to making cider with Hewe's. The red-skinned white-spotted fruit is small, round, juicy, tough, astringent and acidic. According to AJ Downing in 1848, Hewe's "makes a very high-flavored dry cider, which, by connoisseurs, is thought unsurpassed in flavor by any other, and retains its soundness a long time." Incredibly vigorous, productive and healthy in our trials. The trees look great. Evidently it loves cold weather. Quite hardy despite its name. Long ago used as a rootstock even as far north as Maine. Blooms midseason. Z4. **ME Grown.**



231C Hewe's Virginia Crab on M111, $30.25

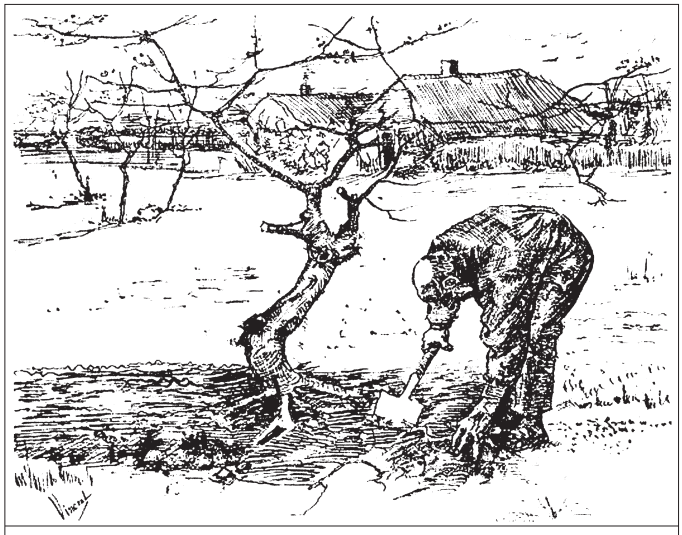
Kingston Black Fall. **Vintage bittersharp** cider apple. Parentage unknown. Somerset, England, early 19th c. High in tannin and acidity. (SG 1.061, acidity 5.8g/L, tannin 1.9g/L) Produces full-bodied vintage cider with a nice blend of acid, tannins and sugar. One of the noteworthy varieties that makes a high-quality single variety hard cider, also good in a blend. We became fans of Farnum Hill's tasty Kingston Black varietal. Now we make it ourselves. Also makes superb fresh cider. Even the fresh juice is a deep rich dark color. Medium-sized conical beautiful rich red fruit is mottled with red russet and deeper shades of maroon. Fairly decent fresh eating. The tree is a reliable bearer, but is gangly and needs careful pruning. Blooms midseason. Z4. **ME Grown.**



232A Kingston Black, $30.25
232C Kingston Black on M111, $30.25

Major Early Fall. **Full bittersweet** cider apple. Probably originated in central Somerset County, England, before 1900. Sweet, soft, woolly, juicy and bitter. (SG 1.054, acidity 1.8g/L, tannin 4.1g/L) Recommended for combining with other early cider varieties such as Ashton Bitter, Ellis Bitter and Nehou. Medium-sized pinkish-rosy-red roundish-oblate-conic fruit, sometimes ribbed and usually featuring a small yellowish russet splash around the stem. One of the English varieties now becoming popular in the U.S. Vigorous tree with a good central leader and a spreading branching habit. Similar to other Jersey-type cider varieties. Scab resistant. Late blooming. Z4. **ME Grown.**

233C Major on M111, $30.25



A tribute to three friends from the apple world

The apple world lost three elder champions of apple diversity, preservation and history: Nick Botner, 93; Tom Burford, 84; and Lee Calhoun, 86. They died within five weeks of each other in the winter of 2020.

Creighton Lee Calhoun of Pittsboro, NC, spent decades researching, tracking down and collecting historic apples of the South. He founded the living collection at Horne Creek Farm in Pinnacle, NC. His book *Old Southern Apples* is an essential piece of American pomological documentation that blends history, varietal descriptions and a wonderful collection of stories and yarns.

Nick Botner of Yoncalla, OR, farmed and collected fruit varieties, primarily grapes, pears and apples. His nearly 5,000 apple varieties became the largest private collection in the world. He sold scionwood to thousands of orchardists, primarily through Seed Savers Exchange. Because of Nick's work I was able bring home a number of varieties traditionally grown in Maine but thought to have been lost forever.

Tom Burford grew up in the Blue Ridge Mountains of Virginia where his family had been growing apples since 1715. His book *Apples of North America* describes 192 of his favorites from around the country, including many offered in Fedco catalogs over the years.

Through their passion, knowledge and generosity, all three contributed greatly to my life and the lives of thousands of fruit enthusiasts. They will be greatly missed.

–John Bunker

Medaille d'Or Late Fall. **Full bittersweet** cider apple. Parentage unknown. Developed by M. Goddard of Boisguillaume, Rouen, France, probably mid-19th c. The gold medal of cider apples, introduced into England in 1884. Full bittersweet, high in bitterness and astringency. (SG 1.053-1.059, acidity 2.1-2.7g/L, tannin 4.4-6.4g/L) Combine with other late varieties. Small-to-medium roundish-conic yellow fruit mostly covered with a netting of golden russet and sometimes featuring a soft reddish blush. Wide spreading vigorous tree with good branch angles. Scab resistant but said to be susceptible to fireblight. Blooms late season. Z4. **ME Grown.**

234C Medaille d'Or on M111, $30.25

Porter's Perfection Late Fall. **Medium bittersharp** cider apple. Charles Porter intro, East Lambrook, near Kingsbury Episcopi, Somerset, England, before 1900. Heavy cropper of small dark red-blushed fruit. (SG 1.054, acidity 8.2g/L, tannin 2.5g/L) Liz Copas writes that it "can produce an excellent cider. Its juice is rather acidic bittersharp and is better blended for a more balanced product." When I meet cidermakers, I always ask them about their favorite varieties. Eric Shatt of Redbyrd Orchard Cider in the Finger Lakes region of New York replied, "Porter's Perfection." Redbyrd's website calls it an "excellent balance of tannins and acidity." Often produces twins or triplets—two or more fruits fused together. Similar to the excellent Lambrook Pippin; the two varieties are thought to be of same parentage. Scab resistant. Blooms midseason. Z4. **ME Grown.**

235C Porter's Perfection on M111, $30.25

Redfield See page 12 for description.

Reine des Pommes Fall. **Full bittersweet** cider apple. Probably originated in northern Brittany, before 1900. Still known in Mayenne and surrounding areas. Also called **Doux Geslin**. The fruit is sweet, woolly and astringent (acidity 2.4G/L, tannin 4.7G/L), best for blending. Medium-sized oblate-roundish-conic fruit, mostly russeted over a beautiful blend of reds, oranges and yellow. Years ago Terry Maloney of West County Cider in Colrain, MA, wrote to me, "I think the Reine des Pommes has the most powerful and unique taste in a cider of any of the apples we grow. It's a true spitter though. It does okay around here, with a tendency towards biennial bearing and an upward growth habit." Recommended for trial in all locations. Blooms early to midseason. Z4. **ME Grown.**

236C Reine de Pommes on M111, $30.25

Wickson Fall. **Vintage sharp cider apple.** See page 14 for description.

Yarlington Mill Fall. **Medium-bittersweet** cider apple. Yarlington, near North Cadbury, Somerset, England, 1898. Rich brown low-acid juice, mildly aromatic, fruity and not aggressively tannic. Above-average sugar content. (SG 1.053-1.075, acidity 2.2g/L, tannin 3.2g/L) Slow to medium fermentation. Medium-sized yellow distinctly conic fruit with a pinkish blush and overspreading darker red stripes. Considered an all-round excellent cider variety: reliable, productive and adaptable to varying conditions. We've heard reports of it thriving in Zone 3. Steve Wood's other favorite bittersweet (see Dabinett). Highly recommended for home and commercial cider plantings. You may need to head back the leader in early years to encourage strong laterals. Midseason bloomer. Z3/4. **ME Grown.**

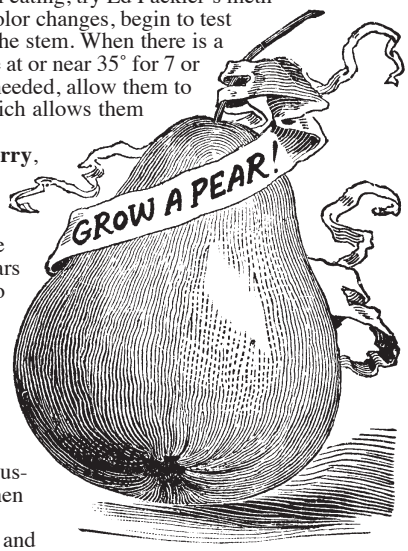
237A Yarlington Mill, $30.25
237C Yarlington Mill on M111, $30.25

Hard Cider Apple Collections A bundle of 5, 10, or 25 trees to begin your cider orchard. Includes an assortment of bittersharp and bittersweet apples. Bundle of 5 will have 5 different varieties. Bundles of 10 and 25 will have at least 3 different bittersweet varieties. Collections may include varieties not listed in this catalog. Rootstocks will be either semi-dwarf or standard. Trees are individually labeled within each bundle. Sorry, collections are not customizable. Please note that purchasing a bundle of 25 will qualify your order for a 15% discount if you order by the discount deadline. See order form, page 35, for details. All hardy to Z4. **ME Grown.**

266A Hard Cider Apple Collection, bundle of 5, $136.00
266B Hard Cider Apple Collection, bundle of 10, $257.00
266C Hard Cider Apple Collection, bundle of 25, $605.00

Pears *Pyrus communis*

Native to temperate Europe and Asia, pears can grow up to 100' tall in the wild. Many pear varieties are hardy in New England but tend to take longer to come into bearing than apples. Farther south, pears tend to bear annually. However, in Maine, where they are approaching their northern limit, some varieties tend to bear biennially. Pick fruit when green and ripen it on the shelf. Or, for optimal eating, try Ed Fackler's method: "…when fruits exhibit slight color changes, begin to test pressure (using your thumb) near the stem. When there is a slight 'give,' pick all the fruit, store at or near 35° for 7 or more days. Then remove them as needed, allow them to sit at room temps for 2–4 days which allows them to ripen to peak flavor."



Some varieties are useful for **perry**, the pear equivalent of hard cider. We've grouped these varieties together on the next page.

Pear blossoms are less attractive to bees than apple blossoms, so pears should be planted closer together to ensure pollination. Although some pears appear to be self-pollinating, **we recommend a second variety for pollination.** Bloom dates for all varieties are similar.

Fireblight is becoming more common in Maine. We've begun tracking which varieties are more susceptible and will share that info when we have more solid data.

Pears are on OHxF97 rootstock and will reach 25' or taller at maturity; plant 15–20' apart. (2½-6' trees)

Bartlett Late Summer. Seedling found in Aldermaston, England. Introduced to the U.S. in the late 1700s. Also known as **Williams' Bon Chrétien**. The most widely planted and well known of all pears, accounting for 75% of the U.S. commercial crop. Adaptable to many climates and soils. Large classic pear-shaped greenish-yellow fruit; very good quality. Full reliable annual crops. Might be iffy north of Bangor. Large vigorous easy-to-grow long-lived tree bears young. Susceptible to fireblight. Good pollinator for Asian Pears. Will not pollinate Seckel. Z4. **ME Grown.**

285A Bartlett, $31.75

Beurre Clairgeau Mid-Late Fall. Pierre Clairgeau intro, Nantes, France, circa 1830. Large Bartlett-shaped yellow fruit with a beautiful red blush sprinkled with russet. At its best, the fruit is richly flavored, melting, buttery, juicy, sweet and aromatic. Brought to the U.S. around 1854, Clairgeau found its niche for canning and other cooking. The trees are beautiful, vigorous, unusually upright, healthy, very productive, bearing young and annually. Quickly spread throughout New York and New England up into Maine, becoming a mainstay of American pear growing at that time. Now mostly forgotten—we're pleased to be bringing it back. Z4. **ME Grown.**

286A Beurre Clairgeau, $31.75

Bosc Fall. Seedling introduced by Van Mons, Lourain, Belgium, 1807. Also called **Beurre Bosc**. Long-necked fruit is dark rich yellow covered with cinnamon-brown russet. Distinctive sweet rich spicy buttery flavor. Melting juicy tender white flesh has smooth texture and a pleasing aroma. Somewhat gritty around the core. Large vigorous upright spreading tree bears huge crops annually. Good pollinator for other varieties. A longtime favorite throughout central Maine. Z4. **ME Grown.**

287A Bosc, $31.75

Cabot Vermont Fall. An old dessert pear, circa 1850, discovered in Cabot, VT, a few miles west of the New Hampshire border and about as far north as Bangor, ME. A superior dessert pear with medium-large pear-shaped fruit. Yellowish skin has a slight reddish blush. Yellowish sweet flesh is coarse grained, extremely juicy, with no grit cells. Not only is it a delicious dessert fruit, it is also remarkable for its very rare "double" flowers. Highly ornamental! Introduced to us many years ago by Armando Bona of Passumpsic, VT. Not to be confused with the old Massachusetts pear Cabot. Annual and self-pollinating. Very hardy. Z4 or possibly even Z3. **ME Grown.**

289A Cabot Vermont, $31.75

ME Grown = grown in Maine at one of our small local nurseries.

Comtesse Clara Frijs Late Summer. Denmark, 19th c. Very old delectable dessert pear, first described in 1858 by JA Bentzien in the Danish garden journal *Dansk Haugetidende* and thought to be from the village of Skensved. Medium-sized thick-skinned pear-shaped fruit is dotted yellow-green, sometimes with a very slight pink blush like a spot of rouge. The buttery aromatic flesh is firm but not crisp with no grit cells. Juicy but not dripping. You can eat it in the car. You can eat it right down to nothing. Keeps for a month. Solid rugged hardy tree. Z4. **ME Grown.**

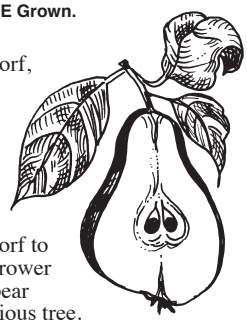
290A Comptesse Clara Frijs, $31.75

Dana Hovey Winter. Thought to be a seedling of Seckel. Roxbury, MA, about 1854. Introduced by 19th-century fruit enthusiast Francis Dana who dubbed it "Dana's Hovey" in honor of CM Hovey, Boston nurseryman and author of *The Fruits of America*. Sometimes called **Winter Seckel** because of its similarity to Seckel. Small squat rich golden-yellow russeted fruit. Intensely sweet highly aromatic tender storage pear has excellent flavor; possibly the best eating of all winter pears. Keeps extremely well. Harvest in October and store in a cool dry spot. Still great eating in December—sometimes even as late as February. Hardy vigorous moderately productive spreading tree adapts to a variety of soils. No scab and relatively few bugs. Z4. **ME Grown.**

291A Dana Hovey, $31.75

Duchesse de Berry d'Ete Mid-Late Summer. Seedling from Commune of Saint-Herblain, Dept of Loire-Inferieure, France, 1827. Very high-quality summer dessert fruit. Semi-fine, melting, juicy, sugary and aromatic. Medium-small roundish yellow fruit blushed red and covered with brown dots. Vigorous upright habit. We've been on a mission to track down lost pears historically grown in Maine. Sometimes it feels a bit like looking for passenger pigeons, but then another one shows up. We found this one in a collection out west. We think it initially came to Maine from one of the large 19th-century nurseries in Rochester, NY. Productive vigorous upright grower. Z4. **ME Grown.**

293A Duchesse de Berry d'Ete, $31.75



Kaspar's Winter Late Fall-Winter. Frankendorf, Germany. Very good tough-skinned storage pear—will keep until April in the root cellar. Greenish-mottled medium-small pear-shaped fruit with some russet splashes or dots. Coarse flesh with a good flavor. Very hard off the tree; don't begin to eat them until a month after picking. Years ago this nameless winter pear found its way from the roadside near Frankendorf to Unity, ME. The name came later, courtesy of grower Howard Wulf who calls it "the latest-keeping pear I've ever seen." Sturdy adaptable hardy precocious tree. Recommended for those who want pears into January. Z4. **ME Grown.**

295A Kaspar's Winter, $31.75

Luscious Early Fall. SD E31 x Ewart. SD St U, 1967. Produces annual crops of delicious medium-sized classic pear-shaped fruit. The soft fine extra-juicy off-white flesh is sweet and flavorful with almost no grit cells. Thin yellowish skin is covered with small tan dots. Bears so heavily it can use support. Anecdotal evidence suggests that it may crop best when grown near Bartlett or one of the Asian pears. **Will not pollinate other pears.** Fireblight resistant. Z3. **ME Grown.**

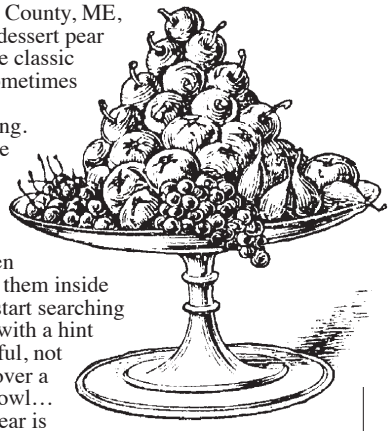
296A Luscious, $31.75

The Hunt for Old Maine Pears

By Dan Newman, historian, pear enthusiast, and an active member of the Palermo Historical Society

While pears have been grown in Maine since the 17th century, they've never achieved the ubiquity of the apple. Most of the grafted varieties—whether they were of American or European origin—failed to produce satisfactorily, or even to survive Maine's winters. Trees grown from seed occasionally produced a hardy tree with good fruit that enjoyed a measure of attention in New England and beyond. A few of these varieties came out of Maine. In dooryards, neglected old orchards, at the edges of the encroaching forest, await wonderful history and flavors in these ancient Maine trees.

The hunt is on for old Maine pears! We believe that the McLaughlin of Scarborough has been rediscovered. We're on the lookout for the Raymond and Beurre Preble, both from Raymond; Nickerson from Readfield; Fulton from Topsham; Goodale from Saco; and Eastern Belle, Indian Queen and Madame Hemenway from Bangor. These trees are living links to the foodways of past generations. It is up to us to preserve these gifts left to our care. Preservation is not an obligation to those who have passed, but rather an obligation to future generations who will harvest the fruit. Plant an heirloom pear and join us in our work!

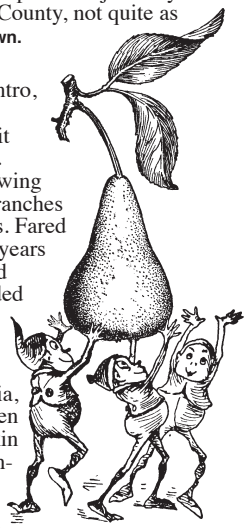


McLaughlin Fall. Probably Oxford County, ME, before 1800. Excellent high-quality dessert pear keeps well into winter. Medium-large classic pear-shaped yellow russeted fruit, sometimes with a reddish blush. Sweet, rich, perfumed, extremely juicy and melting. Introduced to us by Steve Barr whose family's tree was planted about 120 years ago. "Don't despair [when] this pear comes off the tree like a green rock in October. We shake them down after Columbus Day when the nights are getting cold. We bring them inside and place them in canvas bags, and start searching in a week or two. The taste is sweet with a hint of cinnamon, and the texture delightful, not mealy. A juicy pear you have to eat over a napkin or cut it up and eat out of a bowl… yields heavily year after year. This pear is easy to grow, we do nothing to it at all except pick them in October." Through our best effort to identify this pear, we tentatively believe it to be McLaughlin. As we continue to scrutinize the fruit, there's a possibility it may turn out to be another Maine heirloom. Z4. **ME Grown.**

297A McLaughlin, $31.75

Nova Late Summer. Hammond, NY. Seedling discovered and introduced by Bill MacKentley of St Lawrence Nurseries, Potsdam, NY. Large yellow rounded dessert fruit covered in greet dots with occasional russet splashes. Melting juicy flesh. Chris Blanchard's favorite pear. For decades he and Liz Lauer have been trialing a wide assortment of pears a few hours north of us in Penobscot County. He described it as "large with smooth creamy texture and a thin skin. Wonderful dessert pear. Also the best canning of our 12–14 varieties." Holds its shape in the jar. Very hardy, though from our trials in northern Aroostook County, not quite as hardy as Patten. Appears to be scab free. Z3. **ME Grown.**

298A Nova, $31.75



Patten Late Summer. Orel 15 x Anjou. CG Patten intro, Iowa St U, 1922. Very good fresh eating with sweet "high flavor." Fine-grained soft flesh has minimal grit cells. Vaguely reminiscent of Bosc in size and shape. Good canning pear. Tree is extremely adaptable, growing all over the Northeast. Long willowy very flexible branches won't break even under the weight of its heavy crops. Fared incredibly well during the cold "test winter" several years ago when hundreds of northern Maine pear trees died to the roots. Extremely hardy and highly recommended for coldest districts. A good pollinator for other varieties. Scab resistant. Z3. **ME Grown.**

299A Patten, $31.75

Seckel Late Summer. Seedling near Philadelphia, PA, early 1800s. Sometimes called **Sugar Pear**. Often considered the best-flavored of all pears; even the skin is delicious. Small squat fruit is russeted yellowish-brown with slight red blush. Juicy, spicy, distinctive and aromatic. Eat ripe off the tree, or pick firm and ripen later. We use Seckels to make our baked pear sauce. It's wonderful. Very productive annual-bearing large tree, easy to grow. The most reliably bearing pear tree we have in our home orchard. Scab and fireblight resistant. Will not pollinate Bartlett. Z4. **ME Grown.**

300A Seckel, $31.75

Summercrisp Midsummer. MN N33201 (Gaspard No. 5) Brought to the MN Hort Res Stn by John Gaspard in 1933, likely discovered as a wild seedling. U Minn, 1986. Large fat very sweet dessert and canning pear with green skin and a red blush. Ripens in August in Maine. Eat them fresh, can them in quarters, and juice the rest. Precocious annually bearing tree, medium-sized with typically conic habit. Considered the hardiest variety in the Minnesota collection. Free from fireblight. Z3. **ME Grown.**

302A Summercrisp, $31.75

Pear Leaf Blister Mite

Pear leaf blister mites can sometimes be a problem for pear growers in the U.S. The tiny mites overwinter under the budscales and become active in spring. They are too small to see with the naked eye, but you'll know you have them if pear foliage looks like it has red blisters that eventually turn black. We recommend a dormant oil spray in spring just before the pears leaf out. You can also do a sulfur spray in the fall. (Apply appropriately, with protection. Read labels.) As a precaution, we spray Fedco pear trees with Organic JMS Stylet-Oil in the spring before shipping. You'll find organic treatments for fruit trees in our **Seeds & Supplies catalog**, or at fedcoseeds.com/ogs. We have noticed that trees often outgrow the infection even if you do nothing at all.

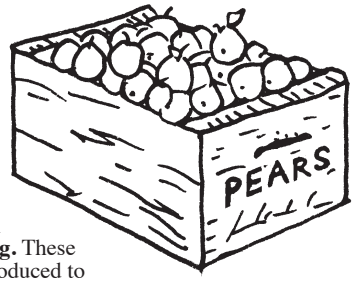
Tyson Summer. Jenkintown, PA, about 1794. The definitive 1921 text *The Pears of New York* calls Tyson's flavor "second only to Seckel," and says that the "tree is the most nearly perfect of any pear grown in America." Medium-sized roundish deep dull-yellow fruit with some russeting and no blush ripens not long after Bartlett. Local lore suggests Jonathan Tyson discovered it in a hedgerow on his farm west of Jenkintown, or maybe on the grounds of the Abington Friends School. Widely planted here in Maine for generations. Our scionwood comes from a huge spreading specimen in nearby Freedom. Well over 100 years old, the annually productive tree lived through all the great winters of the 20th century. Z4. **ME Grown.**

303A Tyson, $31.75

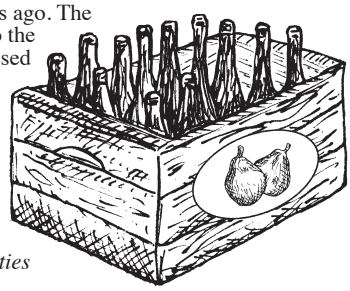
Pear Collection Assorted bundle of 5 different trees will contain a combination of heirloom and more recent varieties to start your orchard. Will not include any perry pears. All hardy to Z4 and **ME Grown.**

315A Pear Collection, bundle of 5, $142.00

Perry Pears



Perry is fermented pear juice, the pear equivalent of cider. Although it can be made with any pears, it is traditionally made in western England and northern France using small bitter inedible pears. The perry pear varieties we offer this year all originate from western England. **None are for fresh eating.** These pears are thought to have been introduced to England by the Romans 2,000 years ago. The feral "choke" pears naturalized into the landscape and were eventually pressed and fermented. Local trees became famous. When we went to England in 2011, we visited huge perry pear trees known to be more than 300 years old. Three years later we visited many large old trees in Normandy. The best book on perry pears is *Pears of Gloucestershire and Perry Pears of the Three Counties* by Charles Martell (2013).



Blakeney Red Fall. English perry pear. Undetermined parentage, from the village of Blakeney in the Forest of Dean, England, becoming popular by 1830. Sometimes called **Painted Lady**, **Painted Pear**, **Circus Pear**, **Red Pear** and **Brinsop Red Longtail**. Traditionally used in cooking, jams and particularly in perry. Classified as a medium-sharp perry pear, with medium acidity and medium tannins. Small-medium 2" roundish red-blushed and russeted fruit is firm and juicy, but not for fresh eating. Productive and best blended with other perry pears. Once grown throughout much of the English West Midlands, still quite popular in the U.K. Perry makers across the U.S. are planting it now, too. Z4. **ME Grown.**

316A Blakeney Red, $31.75

Gin Fall. English perry pear. Possibly from Highfields, Newent in Gloucestershire, England. First recorded in 1886. Makes a high-quality aromatic perry reminiscent of juniper, hence the name. Medium sharp with medium acidity and medium tannin. Not for fresh eating. Small 2" roundish fruit is greenish-yellow and russeted with an orange-blush. Considered to be extremely rare although currently begin planted more frequently. Good disease resistance. Z4. **ME Grown.**

317A Gin, $31.75

Hendre Huffcap Fall. English perry pear. Also called **Lumberscull**. Probably originated near the villages of Bromsberrow and Haresfield in Gloucestershire, England, before 1900. Sweet and astringent, with low acidity and low tannin. Charle Martell calls it "one of the very best vintage varieties of perry pear with all the most desirable orchard properties." Small (2" or less) roundish fruit is yellowish-green, partly russeted and orange-blushed. Not for fresh eating. Z4. **ME Grown.**

318A Hendre Huffcap, $31.75

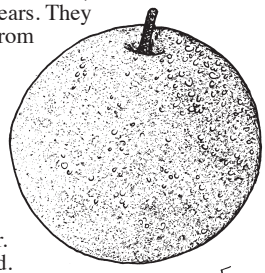
Yellow Huffcap Fall. Ancient English perry pear. Possibly originated on or near the Chandos Farm in Much Marcle in the 17th century. Many synonyms including **Chandos Huffcap**, **King's Arms**, **Uffcap**, **Uffcup**, and **Yellow Longdon**. Medium sharp and astringent with high acidity and medium tannin. According to Craig Campbell of Tieton Cider Works in Yakima, WA, Yellow Huffcap makes their best perry. Small oval yellow-green russeted fruit under 2" in diameter with slightly yellow flesh. Z4. **ME Grown.**

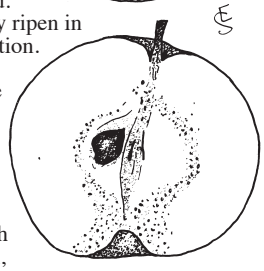
319A Yellow Huffcap, $31.75

Perry Pear Collection Bundle of 3 different trees to start your perry pear orchard. All hardy to Z4 and **ME Grown.**

322A Perry Pear Collection, bundle of 3, $85.00

Asian Pears *Pyrus pyrifolia*





There are thousands of named Asian pear cultivars in China, where they have been grown for more than 2000 years. They are long-lived and bear young. Asian pears differ from European pears: they are crisper and very juicy, sweet and mild with a nutty background, and are roundish in shape. **Although partly self-fruitful, pollinators are recommended.** The varieties we offer will pollinate one another. Some European pears, notably Bartlett, will also act as pollinators. Because they set heavily, thin the crop once or even twice during the first two months after bloom to ensure large fruit. Leave about one fruit per spur. Unlike European pears, they should be tree-ripened. When the seeds are black, the pears are ready. They ripen in late summer and keep several weeks with refrigeration.

Cultural requirements are similar to European pears. Although they are usually considered a Zone 5 plant, many of us in Zone 4 are having bountiful crops. Asian pears reach approximately 15–20' at maturity. Plant trees 15–20' apart. (2½-6' trees)

Chojuro Late Summer. Chance seedling. Kawasaki, Kanagawa Prefecture, Japan, about 1895. Sweet and rich with a distinctive butterscotch flavor when ripened on the tree. White flesh is firm, crisp, somewhat coarse and not overly juicy. Medium-sized oblate to lopsided fruit with greenish-brown to brown medium-thick skin overlaid with thin smooth russet. An older variety that has been used to breed some popular varieties like Shinseiki. Short picking period. Unbruised early-picked fruit will store for a few months in the root cellar. Medium-sized vigorous dense very productive tree, with a spreading, slightly drooping form. Z4/5. **ME Grown.**

323A Chojuro, $31.75

Niitaka Late Summer. Amanogawa x Imamura-Aki. Akio Kikuchi intro, College of Agriculture, Tottori, Japan, 1927. Large roundish orange-brown russeted fruit with sweet crisp juicy flesh. Candy-sweet with aromatic flavors of caramel. Great for fresh eating and canning. Medium to low vigor, very upright, highly productive. Some say the flowers are pollen-sterile, other sources disagree, but Niitaka sets fruit well when cross-pollinated with other Asian varieties or Bartlett. Stores two months. Z4/5.

325A Niitaka, $31.75

Nijisseiki Late Summer-Fall. Chance seedling "found on a rubbish heap" by Kakunosuke Matsudo at Ishii, Chiba Prefecture, Japan, 1898. Also known as **Twentieth Century**. White flesh is mild-flavored, crisp, juicy, medium-sugar and high acid. Medium-large greenish-yellow semi-glossy fruit is roundish-oblate. Stores up to 6 months in cool storage. This is the pear that, along with Chojuro, kicked off the Asian pear industry in Japan and became the standard to which all others are compared. Used extensively in modern Japanese pear breeding programs. Tree is medium-sized, upright and spreading. Ripens a couple of weeks later than Shinsui. Z4/5. **ME Grown.**

326A Nijisseiki, $31.75

Shinseiki Late Summer. Nijisseiki x Chojuro. Teiji Ishikawa intro, Okayama Prefecture Ag Exp Stn, Japan, 1945. White flesh is crisp, sweet and mildly tart with lots of juice. Medium-sized round-oblate light to medium-bright yellow fruit, with little to no russeting. *Shinseiki* means 'new century.' Keeps about 3 months in storage. Dense spreading precocious productive tree. Disease resistant. Z4/5. **ME Grown.**

327A Shinseiki, $31.75

Shinsui Summer. Kikusi x Kimizukawase. Hort Res Stn, Yatabe, Japan, 1967. Medium-sized round-oblate yellowish-brown russeted fruit with crisp juicy fine-textured very sweet flesh. Not as firm as other Asian pears. One of the earliest to ripen each year. Pennsylvania grower and Asian pear aficionado Ike Kirschner considers this a great pear. Keeps about 6 weeks in refrigeration. *Shinsui* is translated as 'new water,' 'adoration,' 'inundation' and more. It is also the pseudonym of one of Japan's most famous 20th-c. artists, Ito Shinsui (1888-1972). Even if you don't know his name, you will likely recognize his iconic colorful prints of young women. Z4/5.

328A Shinsui, $31.75

Yoinashi Fall. Fowler Nurseries intro, Newcastle, CA, about 1987. Fine-textured off-white flesh is crisp, juicy, aromatic and sweet. Large conic light brown russeted fruit. Means 'good pear' in Japanese. It is a good variety! One of the folks at Fowler Nurseries described it to us as having "a little bit of a zip" to it. Harvest after Hosui and before Shinko. Upright medium-vigorous tree. Moderate tolerance to fireblight. Z4/5. **ME Grown.**

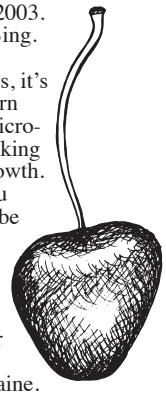
329A Yoinashi, $31.75

Stone Fruits *Prunus* spp.

Widely cultivated around the world and adaptable to most of New England. Not highly particular as to soils. Clingstone means the fruit's flesh clings to the pit (or stone) and a freestone pit drops away from the flesh.

Sweet Cherries *P. avium*

Generally grow into large trees although the flowers are tender and fruiting can be iffy in central Maine and north. We are testing some of the hardiest varieties and hope to have more available in coming years. **Most sweet cherries need a second variety for pollination.** See descriptions for pollination requirements. We recommend planting two or more varieties for best results. Mature trees reach 25–30' tall. Space trees 25' apart. (2½-6' trees)



Benton Summer. PC7146-8 Stella x Beaulieu. WSU, 2003. Highly flavorful large firm deep red cherry resembles Bing. Flowers almost a week later than other sweet cherries, potentially missing late frosts. Like many sweet cherries, it's difficult to know how it will perform in much of northern New England; nonetheless we're excited to trial it in micro-climates and warmer locations. Less susceptible to cracking than other varieties. Vigorous upright and spreading growth. **Self-pollinating.** We can't promise hardiness, but if you think you have a good spot for a sweet cherry, it might be worth a shot. Keep us posted! **PPA**. Z5.

332A Benton, $31.75

Lapins Summer. Van x Stella. Summerland Res & Dev Ctr, BC, Canada, 1983. Large sweet high-quality black-mahogany-red–skinned fruit. Ripens a week after Stella, by mid-July in warmer districts. Very vigorous, productive and upright; crops consistently in central Maine. **Self-pollinating**, but benefits from planting with another variety. Z4/5.

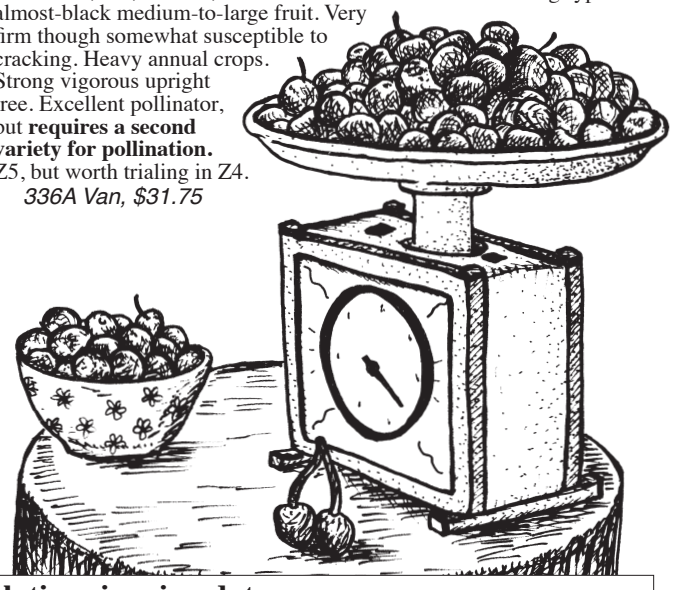
333A Lapins, $31.75

Rainier Summer. Wash. P1-680 (Bing x Van) Harold W. Fogel intro, WA Ag Exp Stn and USDA, 1960. Classic dessert cherry. Very large fruit, light yellow skin with red blush. Firm fine-textured flesh with a distinct delicious flavor. Colorless juice. Good fresh or canned. Quite resistant to cracking. Ripens midsummer. Vigorous productive tree. Early to come into bearing. One of the hardiest sweet cherries; currently bearing fruit in some Zone 4 locations. **Requires a second variety for pollination.** Z4/5. **Indigenous Royalties.**

335A Rainier, $31.75

Van Summer. Empress Eugenie x open-pollinated. Summerland Res & Dev Ctr, BC, Canada, 1944. Later than other varieties. Bing-type almost-black medium-to-large fruit. Very firm though somewhat susceptible to cracking. Heavy annual crops. Strong vigorous upright tree. Excellent pollinator, but **requires a second variety for pollination.** Z5, but worth trialing in Z4.

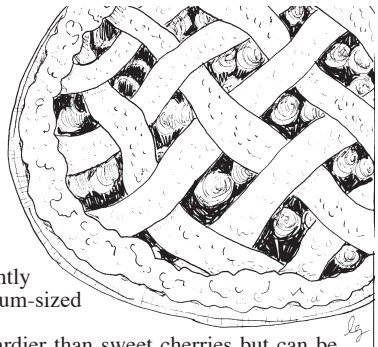
336A Van, $31.75



Relative ripening dates

Although our catalog focuses on woody plants that do well in the northeast, we have customers all over the U.S.—up along the Canadian border, in the mid-Atlantic states, down in the mountains of North Carolina and out west in the high desert—anywhere hardiness is important. We love having customers so spread out, and we do our best to tell you when a variety will ripen in your orchard. But it's not easy. A fruit that ripens in September in northern Maine might ripen a month earlier in Pennsylvania. Ripening dates also vary from year to year depending on conditions. Not only that, the fruit might be exquisite up north but rather blah farther south. That's the nature of these varieties, and it's part of why we offer so many each year. We think you'll find varieties that can thrive in your area.

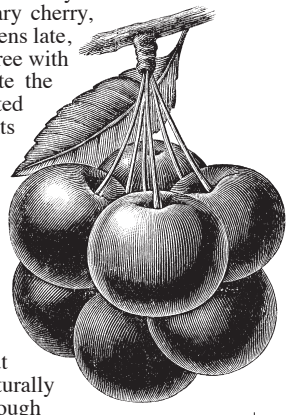
Pie Cherries *P. cerasus*



Also called **Sour Cherries**. Delicious enough to eat right off the tree and especially good in pies. They fruit in early to midsummer and don't mind heavy soil. Pie cherries are generally divided into two groups: **Morello** types have dark red spherical fruit, dark juice and relatively small compact trees. **Montmorency** (or Amarelle) types have light red slightly flattened fruit, clear juice and medium-sized somewhat open trees.

Pie cherries are significantly hardier than sweet cherries but can be frustrating to grow. Although the trees are fully hardy in Zone 3, flower buds may be damaged in colder winters. Some growers in Maine have reported large harvests only to have their trees die unexpectedly a year or two later. We regularly hear reports of excellent crops, so we know it can be done. **Pie cherries are self-pollinating, and do not require another variety for pollination.** Mature trees reach 10–15' tall. Plant 15–20' apart. (2½-6' trees)

English Morello Summer. Netherlands or Germany, before 1860 Sometimes called **Grosse Cerise a Ratafia**, **Grosse Lang Lothkirsche**, **Griotte du Nord**, **Morris** and **Colorado Morello**. Very dark red-black skin. Dark red flesh and juice. Excellent culinary cherry, recommended for pies and all other cookery. Ripens late, after Montmorency. Distinctive small roundish tree with drooping branches. Brown-rot resistant. Despite the name we know it by, it is thought to have originated on the European mainland, eventually finding its way to England and then North America. Z4/5.



340A English Morello, $31.75

Evans Mid-Late Summer. Parentage unknown. Edmonton, Alberta. Also called **Bali**. Rescued from obscurity in 1976 by Dr. Ieuan Evans for whom it was named. Popularized by Bill MacKentley of St. Lawrence Nurseries. Large crops of Morello-type fruit are excellent for eating, jams, jellies, pies, dark red juice and wine. Can be very hardy and produce good-quality fruit, but our results in Zone 3 have been inconsistent. Naturally dwarf tree, tolerant of a wide range of soils, although prefers light fertile soils. Z3/4.

341A Evans, $31.75

Garfield Plantation Summer. Garfield Plantation, ME. Heirloom pie cherry grown for generations on an Aroostook County farm. One of our most promising finds in our search for varieties that really produce well. In the spring of '09, Garfield trees in northern Maine flowered and fruited after –44°! Bright red fruit is similar to Montmorency. Hardy, productive, extremely long-lived, and proving to be very resistant to disease in our northern trials. Although the original tree is long gone, it lives on in the form of innumerable young trees that have suckered up to 100' or more behind the farm along the edge of the ubiquitous potato field. Recommended for trial in all areas of northern New England. Z3. **ME Grown.**

343A Garfield Plantation, $31.75

Mesabi Summer. Bing x chance seedling. Duluth, MN, 1964. Red skin and lighter red flesh with clear juice. Bing parentage makes it sweeter than other Montmorency types. Recommended for sauce and pies. We became very curious about Mesabi when we heard reports of 20-year-old trees in Maine remaining healthy and productive. About ten years ago we began a trial on our farm. Our tree has shown no dieback and is quite productive. It has also remained entirely disease free. Naturally dwarf-sized tree will grow to about 10–14'. Z4. **ME Grown.**

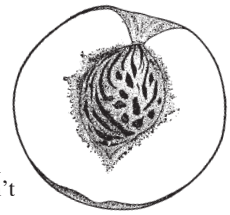
344A Mesabi, $31.75

Montmorency Summer. Seedling of Cerise Hâtive or Cerise Commune. Montmorency Valley, France, before 1600. Introduced to the U.S. about 1830. The most famous of all pie cherries. Not widely grown in Europe or Russia but long the standard of excellence in the U.S. Aromatic firm-fleshed bright red fruit makes a clear light pink juice and is a favorite for processing. Surprisingly hardy, though not as hardy as Evans. Our Aroostook County test orchard trees fare better than Meteor. Should do really well from central Maine south. Appears to be resistant to brown rot. Vigorous productive medium-sized upright-spreading tree tolerates a variety of soils. Z3/4.

345A Montmorency, $31.75

For other tasty fruits called "cherries," see Cornelian Cherry (page 41), Carmine Jewel and Nanking Cherries (page 46).

Peaches *P. persica*



Northern New England peach growing can be very successful. The trees can bear so heavily that the fruit needs thinning and the branches need support. Some winters can be hard on peach trees, and they may die. Other trees live for years. Replant and try again. They are worth the trouble, and since they bear young, you won't have to wait long!

Prune peach trees in spring after the buds begin to swell and show pink. Remove dead and inward-growing branches. Make a few bold cuts to bring main branches closer to the trunk. Peach trees grow vigorously each year and fruit on last year's wood. The goal is to keep trees small and open; leggy branches will break from the weight of the crop. After cutting back any main branches, thin last year's shoots and cut them back to about 12–18". When you're done, the tree shape should look something like an open hand reaching for a peach, with the tree not much taller than 10' or so.

Peaches are usually unaffected by pests or diseases in northern areas, the occasional exception being **peach leaf curl**. PLC is not a fatal problem but does need to be controlled if you get hit with it. Look for crinkled or puckered foliage in spring. Remove affected leaves and compost them. Spray the tree with lime, sulfur or copper early the following spring while it is still dormant (before any buds open!) Onion, garlic or horsetail spray while leafed-out may also be effective.

Peach trees are self-pollinating; they do not need a second tree for pollination. Mature trees will be 10–15' tall; plant 20' apart. (3-6' trees)

Madison Late. Ideal x Red Haven. VA Stn, 1963. A fine peach for the North, with hardiness similar to Red Haven but ripening 3 weeks later, around the time of the Common Ground Country Fair. Medium-large fruit with bright orange skin and bright red blush. Orange-yellow firm fine-textured juicy flesh with excellent very sweet rich peach flavor. Skin peels easily. Freestone, excellent canner. Very productive. Exceptional tolerance to blossom-season frost. A Fedco favorite! Z4.

351A Madison, $30.25

Redhaven Early-Mid. Halehaven x Kalhaven. MI Ag Exp Stn, 1940. Considered hardy, but not as hardy as Reliance. Medium-sized round fruit with beautiful red and golden-yellow skin and sweet firm fine-textured yellow flesh. Non-browning. Excellent for eating, freezing, canning, shipping. Countless Fedco customers call this their favorite peach; also the world's most widely planted freestone peach. Hardy buds; trees have produced crops in southern Aroostook County orchards. Vigorous highly productive disease-resistant spreading trees are tolerant to bacterial spot. Z4.

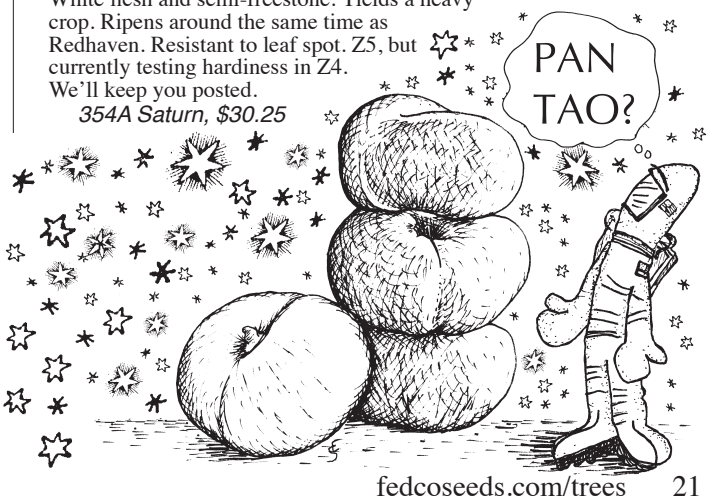
352A Redhaven, $30.25

Reliance Early-Mid. Open-pollinated seedling of Minn PHO 4559 x Meredith. NH Ag Exp Stn, 1964. Considered the hardiest peach. Medium-sized, roundish, freestone. Rather dull red blush over greenish yellow. Bright yellow flesh, soft and juicy. Flavor usually considered fair, but we love it in Maine. Often produces large crops. Bears at an early age. May have some resistance to peach leaf curl. Z3/4.

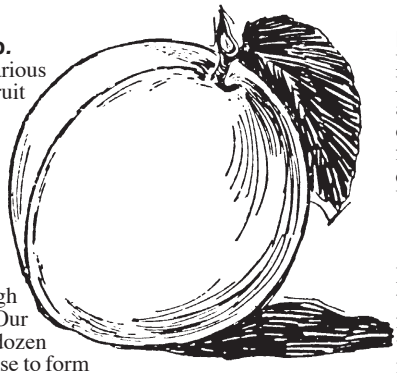
353A Reliance, $30.25

Saturn Early-Mid. NJF2 (NJ602903 x Pallas) Rutgers NJ Ag Exp Stn intro, 1985. From a category called Peento peaches, doughnut peaches or UFO peaches because they are flat! Looks like it came from the other side of the galaxy. Descended from the wild disc-shaped *pan tao* peaches in China. Once thought to be heavenly fruits that would bestow immortality on those who tasted their flesh. Saturn is a hybrid bred for bud cold-hardiness while maintaining the *pan tao*'s legendary sweet aromatic peachy deliciousness. Red blush over a creamy green background. White flesh and semi-freestone. Yields a heavy crop. Ripens around the same time as Redhaven. Resistant to leaf spot. Z5, but currently testing hardiness in Z4. We'll keep you posted.

354A Saturn, $30.25



Hybrid Plums *Prunus* spp.



Extremely hardy crosses between various Asian and American species; may fruit even after severe winters.

Hybrid plums require a second variety for pollination. Hybrid plum pollination has been glossed over—or avoided—in virtually all catalogs and fruit-growing literature for generations. Here's what we recommend:

Plant a cluster of trees close enough together for the branches to mingle. Our clusters number from 3 to nearly a dozen trees planted. They can be planted close to form a thicket, or spaced 15–20' in an orchard setting. Include native plum pollinators (*Prunus americana* seedlings or varieties) among the hybrids. With some decent sunshine during bloom, you should get good fruit set. We suggest Toka and South Dakota as good pollinators in addition to *P. americana* or *P. nigra* seedlings or grafted trees in the orchard. We include the American plum seedling in this hybrid section because it may be the best pollinator for the hybrids.

Bloom times are similar for the varieties we offer; however, some growers have been concerned that the American plums, including South Dakota, bloom later than the hybrids. Some years, this can be an issue. Ideally you would plant at least 4 different varieties. Regardless of which ones you plant, you should get a good mix of pollen when each variety is in bloom. If you have the space, consider our Hybrid Plum Collection to cover all the bases of pollination.

Pollination may also improve with heat. Growers in warmer districts often report better success with pollination. This may be because the heat prolongs the bloom season, increasing the number of trees with simultaneous available pollen.

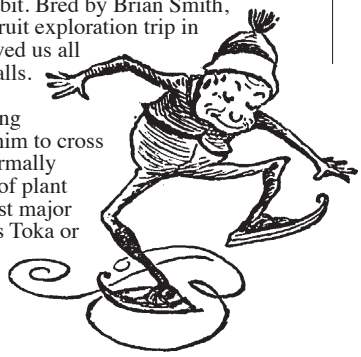
A long cold spring may also help with pollination. When the plums finally bloom, they all bloom at once. At maturity, hybrid plums are roughly 15–20' tall.

Much less susceptible to black knot than European plums. (3-6' trees)

American Plum Seedling *P. americana* 15-20' Not a hybrid, but included here since it may be the best pollinator for hybrid plums. Seedling plum that grows in thickets and produces very decent red, yellow and orange 1" fruit, suitable for fresh eating, canning and freezing. Spectacular white bloom in spring. Red fall color. Plant singly as a graceful specimen, or let the branches intertwine with other plums for maximum pollination, planting one American plum for every 3–4 hybrid trees. Tends to sucker freely. This tree stock is significantly larger than plum seedling rootstock (see page 39). Extremely hardy. Z3. **ME Grown.**

358A American Plum Seedling, $21.00

Black Ice Midsummer. P. Lydecker [*P. besseyi* x (*P. salicina* Oka x *P. sal*. Z's Blue Giant)] U of WI, River Falls, 2006. Large 2" round early-ripening high-quality hardy blue-black dessert plum. Very sweet juicy reddish-purple semi-freestone flesh. Precocious and productive tree with a naturally compact growth habit. Bred by Brian Smith, whom we visited a few years ago on a fruit exploration trip in the Upper Midwest. He graciously showed us all through his amazing nursery in River Falls. He was growing many of his plums in huge tubs, manipulating bloom time using greenhouses and coolers. This enabled him to cross species or varieties that would never normally flower together. Though we're not fans of plant patenting, we are pleased to offer his first major introduction. The literature recommends Toka or La Crescent as a pollinator. Now in trials at our farm. **PPA**. Z3. **ME Grown.**



359A Black Ice, $31.75

La Crescent Late Summer. *P. sal*. Shiro x *P. a*. Howard Yellow. U Minn, 1923. Also known as **Golden La Crescent** or **Golden Minnesota**. Most of the hybrid plum varieties are colored with some variation of red and orange with a little purple tossed in. Yellow-skinned La Crescent is one notable exception. The beautiful roundish tender thin-skinned yellow fruit is sometimes blushed with a little pink. Tender yellow juicy flesh of excellent quality is sweet, aromatic and suggestive of apricots. Freestone. Upright spreading vigorous tree. Z3/4. **ME Grown.**

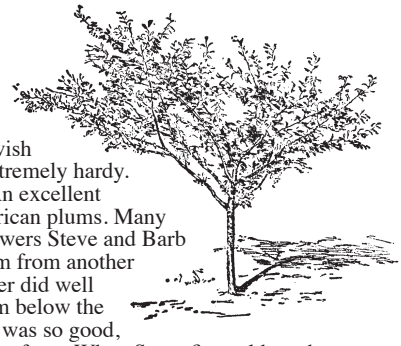
366A La Crescent, $31.75

Lavina Mid-Late Summer. *P. cerasifera* x *P. salicina*. Developed in Lithuania, early 2000s. May also be known as Avalanche. Rare variety in the trade. Stunning golden-yellow skin is blushed dark red to pink when fully ripe—one of the most attractive plums in the orchard with fruit weighing in at just over an ounce. Amber flesh is meaty with unusual flavor notes of papaya and caramel. Ripens in mid-late September in central Maine. Seems to bloom around the same time as Toka. Grower Jesse Stevens' grafts survived a cold snap of –26° with only minor dieback. Highly vigorous growth. Semi-freestone and crack resistant. Z4. **ME Grown.**

367A Lavina, $31.75

Monitor Late Summer. MN 70 (*P. sal*. Burbank x *P. a*.) U Minn, 1920. Medium-sized roundish ovate pointed fruit has thick deep purple skin and a thin bloom. Meaty tart strong-flavored orange flesh. Frank Foltz of the old Northwind Nursery in Minnesota described it to us as having a "strong, spice flavor on the tart side…too tart, perhaps, for most peoples' taste, but I like the sprightly flavor." We like it, too! Clingstone. Vigorous reliable productive upright spreading tree. Z3/4. **ME Grown.**

368A Monitor, $31.75



Pamela Late Summer. *P. a*. seedling, Westmanland, ME. Fedco intro, 2105. High-quality sweet-fleshed totally freestone medium-small fruit. Reddish skin with yellowish undertones. Productive and extremely hardy. Flowers with a pinkish tone. An excellent pollinator for hybrid and American plums. Many years ago, longtime Fedco growers Steve and Barb Miller purchased a hybrid plum from another nursery. The grafted plum never did well but the rootstock sprouted from below the graft and eventually fruited. It was so good, they began to graft it around the farm. When Steve first told us about the plum, he just called it Pam (from *P. americana*). We decided to dignify it a bit. Z3. **ME Grown.**

370A Pamela, $31.75

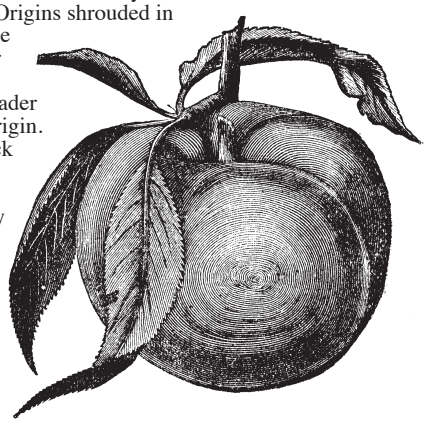
Pembina Early Summer. *P. sal*. Red June x *P. n*. Assiniboine. NE Hansen intro, SD Exp Stn, 1923. Large pointy bright red half-freestone fruit with bluish bloom. Dark golden-orange flesh is firm and apricot flavored. One of the first of the hybrids to ripen in summer, about the same time or a bit earlier than Underwood and well before the bulk of the plum crop. Z3/4. **Indigenous Royalties.**

371A Pembina, $31.75

Pipestone Late Summer. MN 218 [*P. sal*. Burbank x (*P. sal*. x *P. a*. Wolf)] U Minn, 1942. Juicy yellow-fleshed clingstone plum with excellent sweet flavor. Tough yet thin skin peels easily. Large deep red fruit with a golden blush presumably named in honor of the beautiful red catlinite rock of Pipestone, MN, a sacred site to First Nations people. Vigorous reliable hardy tree. Z3. **Indigenous Royalties.**

372A Pipestone, $31.75

Purple Heart Late Summer. Elwyn Meader intro, Enfield, NH, 1968. Medium-sized clingstone fruit with red-purple skin and flesh. Some say the most delicious plum we offer. Meaty, mild and rich with no astringency. It's wonderful. Origins shrouded in mystery. It was brought to the great plant breeder Professor Elwyn Meader by a fellow who passed away before Meader could ascertain the plum's origin. We planted ours next to Black Ice: both are fruiting well. Underwood also may be a good pollinator. Not as hardy as other hybrids. May show tip damage following colder winters in central Maine, some susceptibility to black knot. Z4/5. **ME Grown.**



373A Purple Heart, $31.75

Fruit-growing websites

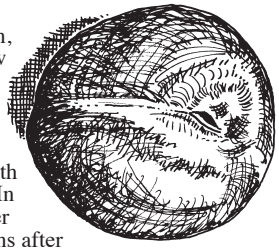
Whether you use organic or conventional orchard practices, several websites can provide you with information about insect and disease pressure, spray timing, frost predictions and a whole lot more.

Here are a few of the best:

UMaine Cooperative Extension: umaine.edu/ipm/programs/apple/
Cornell University: fruit.cornell.edu/
University of Vermont: uvm.edu/~fruit/
UMass Extension Fruit Program: ag.umass.edu/fruit
Holistic Orchard Network: groworganicapples.com/

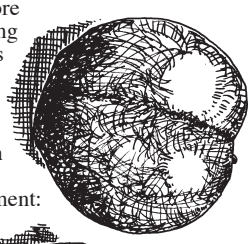
PPA = Plant Patent Act. Unauthorized propagation of the plant is prohibited. The use of **PPA** in the catalog is for informational purposes only and does not constitute an endorsement by Fedco of plant patenting.

South Dakota Late Summer. SD 27. *P. a.* Parentage unknown. U Minn/SD Ag Exp Stn, 1949. Small-to-medium fruit has firm yellow skin with bright red blush. Medium-firm yellow flesh is meaty, juicy, sweet. Excellent fresh-eating quality. Fully freestone. Because of its very long flowering period and American pedigree, we recommend South Dakota as a pollinator for all hybrid plums. In our orchard it's still blooming when the other plums have dropped their flowers. Also ripens after the hybrids are done. Developed by NE Hansen before 1907. One of Hansen's students took it to the breeding program at the University of Minnesota where it was later introduced. Vigorous tree. Z3. **ME Grown.**



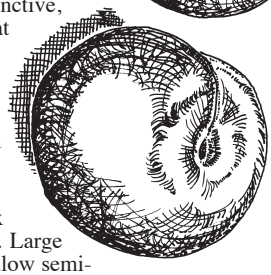
374A South Dakota, $31.75

Toka Late Summer. (*P. a.* x *P. sim.*) NE Hansen intro, SD Exp Stn, 1911. Rosy red fruit is mottled with darker purplish-red and covered with a faint bloom, up to 1 1/2" in diameter. Grower Don Johnson's comment: "Talk about flavor: candy plum." Sweet, distinctive, meaty and flavorful. Not real juicy. Somewhat freestone. Extremely vigorous tree blooms heavily every year. Diligent pruning may be required to keep it from becoming a bit of a monster. Considered a great pollinator for other hybrid plums because of its long bloom period. Z3. **Indigenous Royalties.**



376A Toka, $31.75

Underwood Midsummer. MN 91 [(*P. sim.* x *P. sal.* Shiro) x *P. a.* Wyant] U Minn, 1921. Large 2" dull red fruit. Firm sweet juicy golden-yellow semi-freestone flesh, very good for eating and cooking. Long picking season. Blooms earlier and longer than most hybrids and appears to be a very good pollinator for other hybrid plums, including Purple Heart. Northern Maine grower Steve Miller considers it one of his most reliable bearers. Long ripening season. Vigorous large spreading tree. Z3. **ME Grown.**



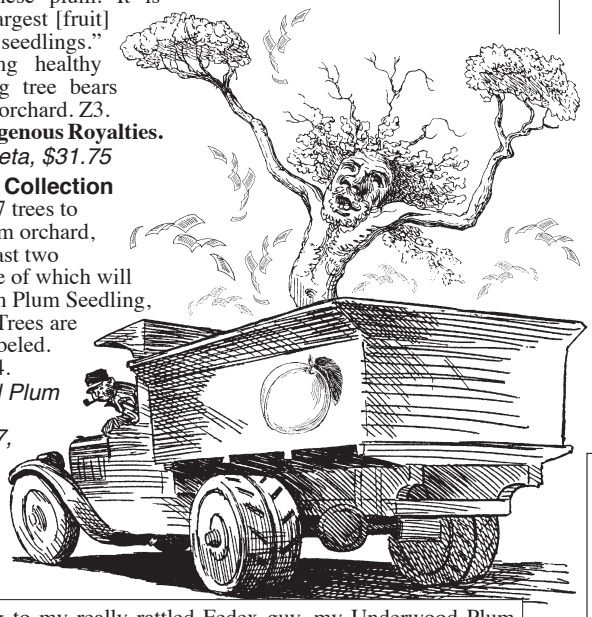
377A Underwood, $31.75

Waneta Midsummer. (*P. sal.* Apple x *P. a.* Terry) NE Hansen intro, SD Exp Stn, 1913. Released when hybrid plums were an important and commercially viable crop. Named after a Yanktonai youth who won fame in the War of 1812 and later became a great chief. Medium to large, somewhat pointed, 1 1/2–2" reddish-maroon clingstone fruit. Sweet tender translucent orange flesh is very juicy but not dripping. Medium-thick skin, tart and easy to peel. Delicious overall taste. Hansen said of Waneta: "My belief is that in this variety I have combined the best points of the native and the Japanese plum. It is probably the largest [fruit] of over 10,000 seedlings." Early blooming healthy open spreading tree bears reliably in our orchard. Z3. **ME Grown. Indigenous Royalties.**

378A Waneta, $31.75

Hybrid Plum Collection
Our choice of 7 trees to begin your plum orchard, including at least two pollinators, one of which will be an American Plum Seedling, *P. americana*. Trees are individually labeled. All hardy to Z4.

383A Hybrid Plum Collection, bundle of 7, $195.00



"So according to my really rattled Fedex guy, my Underwood Plum seedling aided and abetted by Waneta and Toka took over his delivery truck, put him in a head-lock and demanded he deliver them to me first as they were tired of being 'locked down' in a stupid box. The apple seedlings swore they just watched but I don't think so. My those gals are brutes!!!! After I laid eyes on them I immediately set to work greatly enlarging the holes I had just dug for them!!"
–Anita Kelman, Montpelier, VT

European plums *P. domestica*

Delicious fresh and often grown commercially for prunes. A true prune is a plum that can be dried without the pit fermenting. We've heard recommendations to blanch the plums for 45 seconds before drying them. European plums produce smaller fruit and are generally not as hardy as the hybrid plums, though they can handle heavier soils and are less prone to brown rot. Unlike hybrids, they are prone to the fungal disease black knot, which looks like black chewing gum and appears on branches. While not necessarily fatal, it must be kept in check by removing and destroying infected branches. Trees grow upright and are usually trained to a central leader. Although **European plums are self-pollinating**, planting two different varieties will improve pollination. (Will not pollinate hybrid plums.) Mature trees are 15–20', or smaller. Space 20' apart. (3-6' trees)

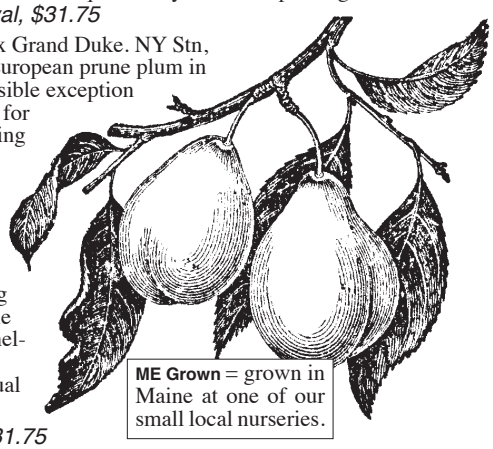
Long John Mid. Robert Andersen intro, NY State Ag Exp Stn, Geneva, NY, 1993. Elongated dark maroon freestone fruit with blue waxy bloom has orange firm sweet-tart flesh. Good fresh eating or dried for prunes. Named after renowned plum breeder John Watson from Geneva, NY. Upright spreading form. Heavy producer. Showing good cold hardiness and resistance to bacterial leaf spot in our trials. Ripens in late September in central Maine. Z4.

386A Long John, $31.75

Mount Royal Late. Chance seedling, Outremont, Quebec, before 1903. Popular plum in Quebec and the northern U.S. for many years. Also called Mont-Royal. Discovered by Mr. Corse in or near Montreal sometime between 1830 and 1850. Bears abundant annual crops of medium-sized roundish dark purple fruit. Often considered the sweetest of the European plums. The flesh is greenish-yellow, juicy and firm. Use fresh, dried, frozen, canned and in preserves. Medium-sized tree is open with good crotch angles and requires only moderate pruning. Z3.

387A Mount Royal, $31.75

Stanley Late. Agen x Grand Duke. NY Stn, 1926. Most popular European prune plum in America with the possible exception of 'Italian'. Excellent for cooking, eating, canning and drying. Medium-to-large oval fruits with dark blue skin. Green-yellow firm but tender juicy fine-grained sweet flesh. Reliably bearing fast-growing adaptable medium-to-large funnel-shaped tree produces healthy vigorous annual crops. Z4.



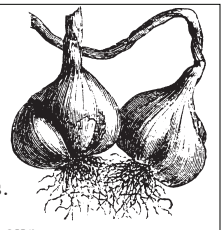
ME Grown = grown in Maine at one of our small local nurseries.

389A Stanley, $31.75

Valor Late. Imperial Epineuse x Grand Duke. Vineland Stn, Ontario, 1967. An excellent all-purpose large semi-freestone fruit with purple-blue speckled skin and greenish-yellow flesh. Best for fresh eating but, like the others, also good dried or canned. In our central Maine trials, this plum has been productive, high quality, cold hardy and resistant to bacterial leaf spot. Ripens a bit after Stanley, in late September or early October. Z4.

390A Valor, $31.75

Plum Curculio... and garlic



Plum curculio is a small pesky insect, a terrible plum and apple pest. We have read that laying sheets of cardboard under plum (and apple) trees will smother the PC pupae developing in the soil. Many organic growers spray Surround clay powder on their trees to combat this weevil. (See our Seeds & Supplies catalog, or visit fedcoseeds.com/ogs, for this and other orcharding supplies.)

Many years ago we planted garlic near one of our apple trees and neglected to harvest all the bulbs. Now we have a small colony of garlic plants around the tree. Recent reports are touting garlic as a curculio deterrent. Anecdotal evidence suggests the garlic may be working at our place. Plant more garlic!

Small Fruits & Berries

Raspberries *Rubus* spp.

We love raspberries: fresh or frozen, in smoothies, jam and especially pie. We even like the foliage—best taken from the first-year primocanes—which makes a delicious and healthful tea. A leaf and fruit vinegar is very high in minerals, and the leaf tea makes a great astringent and tasty tonic. The root bark is also medicinal. Raspberry season in Maine is mid-July through August. Native to North America, Europe and Asia, they are usually identified as *R. idaeus* or *R. i.* var. *strigosus*. 53 different *Rubus* species and subspecies live in Maine.

A second variety is not needed for pollination.

Please note: Raspberries have very fine, fibrous roots. Often they do not sprout from the plant stem after planting. This is okay. Be patient! Keep them well watered and they should all break dormancy, sprout from the roots and thrive for many years to come. All of our raspberry canes are well rooted, bare root and certified virus-free.

EVERBEARING RASPBERRIES

Everbearing raspberries bear on first-year canes (primocanes). Particularly desirable for northern growers because they can die (or be cut) to the ground and still produce a sizable crop the following year. In central Maine the first of these ripens in mid-late August.

Anne Late. JEF-b1 (Amity x Glen Garry) U of MD, 1998. Everbearing sweet flavorful pale yellow raspberry ripens in fall. Large cohesive conic fruit stores decently, is firmer than other yellows. Semi-vertical canes may sucker less than most everbearing types. Cut it entirely to the ground after the season is over. Resistant to phytophthora root rot. Z4.

394A Anne Raspberry, bundle of 10, $29.50

August Red Late. NH R7 [Durham x NH 102 (dwarf F2 seedling x Taylor)] x NY 287 [NY 18810 (Marcy x Indian Summer) x NY 20990 (*R. strigosus* selection)] Developed by EM Meader, UNH, 1973. Considered the hardiest of the everbearing types—the last hope when no other raspberry will survive. Medium-large crimson fruit has excellent flavor. Compact 3' bush bears earlier than other everbearers, even Polana. Productive midsummer, about Aug. 10 in central Maine. We are very pleased to offer this rare variety, bred by Elwyn Meader. Z3. **ME Grown.**

395A August Red Raspberry, bundle of 5, $29.50

Polana Late. Heritage x Zeva Herbsternte. Res Inst of Pomology and Floriculture, Brzezna, Poland, 1991. Large firm red berries with very good flavor on vigorous and productive short canes. Very early for an everbearing variety. In northern districts, it ripens in late August or early September and has performed well in our Fedco trials. According to David Handley of UMaine, "as near a thing to a sure bet." Easy to pick: the berries hang off the tops of the plants. Suckers freely. Z4.

396A Polana Raspberry, bundle of 10, $29.50

Agri-gel Highly recommended for raspberry planting. See p. 33.
L664A Agri-gel, $3.00

SUMMER-BEARING RASPBERRIES

Summer-bearing raspberries bear on second-year canes (floricanes). Midseason berries ripen around late July in central Maine.

Brandywine Purple Mid. NY631 x Hilton. NY Stn, 1976. Red and black raspberry cross with deep purple color and excellent flavor. Large highly aromatic firm glossy fruit is fairly tart and perfect for jam. Not as sweet as Royalty, which we've offered for years, but we thought we'd switch things up. Similar ripening time. Semi-upright vigorous thorny 8–10' canes. Z4.

397A Brandywine Purple Raspberry, bundle of 5, $29.50

Latham Mid. MN4 (King x Loudon) U Minn, 1920. A standard raspberry for almost a century, extremely popular and widely grown. Large bright red 1" fruit is roundish, firm, a little crumbly and sprightly sweet, full-flavored and aromatic. Great for fresh eating, canning, freezing, jam, juice or pie. Ripens over an extended season making it an ideal candidate for the home garden. Canes are 4–5' tall and highly productive. Not as spiny as most raspberries. Widely adaptable and very winter hardy. Disease resistant. Z3.

398A Latham Raspberry, bundle of 10, $29.50

Nova Mid. Southland x Boyne. Kentville, Nova Scotia, Canada, 1981. In our trials Nova appears as hardy, if not hardier, than Boyne and on par in fruit quality, too. Medium-sized firm somewhat acid bright red fruit. Upright productive minimally spiny canes produce long fruiting laterals that make berries easy to pick. Z3.

399A Nova Raspberry, bundle of 10, $29.50

Prelude Early. NY 1009 (NY 817 x Hilton) NY Stn, 1998. Ripens very early and produces a second small crop in the fall, just when we start to miss raspberries. Very large red conic high-quality firm fruit is tasty and mild with little acidity. Vigorous winter-hardy canes. After several years of trial in his nursery, John Meader wrote, "I'd strongly recommend Prelude. It showed hardiness equal to Boyne last winter and fruits the earliest of all varieties I've observed." Suckers freely. Z4.

400A Prelude Raspberry, bundle of 10, $29.50

Black Raspberry

Black raspberries bear on second-year canes.

New Logan Early. Unknown wild parentage. Illinois, early 1900s. A Midwestern heirloom with medium-large tart but flavorful glossy firm blue-black berries covered in whitish bloom. Semi-upright productive canes. This is our first year offering New Logan, so give us your feedback! Z3.

401A New Logan Black Raspberry, bundle of 5, $29.50

Blackberry

Blackberries bear on second-year canes.

Nelson Midsummer. Nelson has been surviving Maine winters for at least a century. Introduced to us by the descendants of Nelson Fronk, whose 1928 family photograph taken on their farm northeast of Farmington shows the blackberries growing by the barn. John Meader calls it "exceptionally hardy," one of the most enduring blackberries he knows. Tall sturdy upright inch-thick canes can be grown on posts or free standing. Fruit is moderately large and quite juicy with true blackberry taste. Highly productive with 16–18 blossoms on the central stalk—the most John has seen on any blackberry. He gets four good pickings over two weeks in mid-August. Excellent jelly and good fresh eating. Disease resistant and certified virus-free plugs. Like all blackberries, spreads quickly so give it room. Z4, maybe Zone 3. (well-rooted plugs)

403A Nelson Blackberry, bundle of 5, $29.50

Growing Raspberries and Blackberries

Cane fruits have shallow perennial roots. They prefer full sun, good air circulation and well-drained soil rich in organic matter. Avoid soils where tomatoes, peppers, potatoes, strawberries or wild brambles have grown. A well-kept patch can last 10–20 years.

Prepare planting holes by adding composted manure (15 bushels dry or 10 bushels fresh per 100 sq ft) and make each large enough to spread out the roots. Do not allow the fine roots to dry out. We suggest soaking roots in Agri-gel (**L664A**, page 33) for 1–2 hours before planting. Plant 1–2" deeper than the nursery line. Mulch with a thick layer of woodchips. Fertilize liberally each spring with up to 100 lbs manure or compost, 8 lbs bloodmeal or 14 lbs soybean meal per 100-ft row. Some sources recommend additional nitrogen feeding each June and August. Plants require 2" water per week during the growing season.

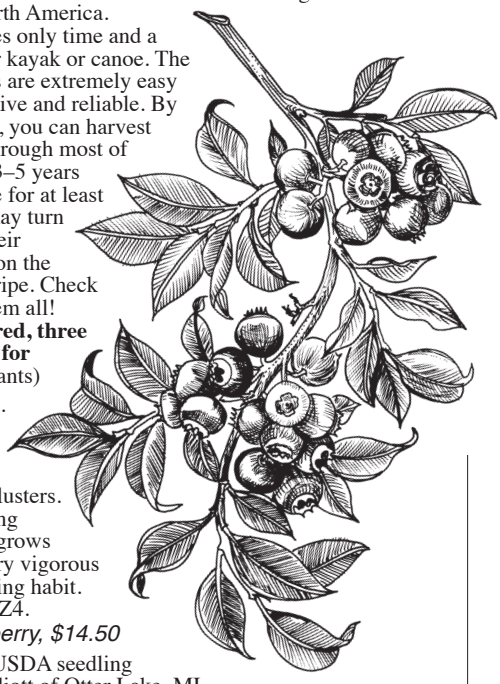
• **Everbearing raspberries:** Plant 9–15" apart. Because everbearing types bear fruit on first-year and second-year canes, you have a couple of options. In warmer districts, you can leave the first-year canes to overwinter after they fruit. The following year, you will get a light crop in early summer from those now two-year-old canes, followed by a larger crop later from the new first-year canes. In colder areas generally you would cut all canes to the ground in late fall after the leaves drop, or in early spring; new first-year canes will fruit in mid-late summer.

• **Summer-bearing raspberries:** To make a hedgerow, trellis between two wires about 3–4' off the ground and 18–36" apart. Space plants 2' apart. After harvest, prune to the ground the canes that carried fruit (or remove them the following spring). Thin the fresh first-year canes to about 3–4" apart. They will bear fruit next year. During the growing season cut back canes to 5' if they are bending over severely.

• **Purple and black raspberries and blackberries:** Plant in hills 3–4' apart, 3–4 plants per hill. Tie to a center post for support, if needed. Basic pruning is the same as summer-bearing raspberries. As they fill in, thin to 5–8 canes per hill. During the early summer, pinch back tip of first year canes to 2½–3' tall. This will encourage lateral fruiting branches. You may run a wire between hills for lateral branching but this is not necessary. In the following spring, cut these fruiting laterals back to 8–12 buds.

Highbush Blueberries *Vaccinium corymbosum*

Many of Maine's lakes are lined with massive stands of highbush blueberries, native to North America. Grazing the shore requires only time and a suitable vessel; we prefer kayak or canoe. The beautiful vigorous shrubs are extremely easy to grow at home, productive and reliable. By planting several varieties, you can harvest berries from early July through most of August. Bears first crop 3–5 years after planting. Productive for at least 20 or 30 years. Berries may turn blue before they reach their peak flavor. Leave them on the bush until they are fully ripe. Check a few before you pick them all! **Two varieties are required, three or more recommended, for pollination.** (1-2' transplants)



Blueray Early-Mid. 4-6'. (GM 37 x CU-5) USDA, NJ, 1955. Large firm dark blue berries of high dessert quality in small clusters. Considered the best-tasting by nearly everyone who grows highbush blueberries. Very vigorous bush with upright spreading habit. Consistently productive. Z4.

405A Blueray Blueberry, $14.50

Bonus Mid-Late. 5-6'. USDA seedling selected by Dr. Arthur Elliott of Otter Lake, MI. First sold to the public in 1990. A newer cultivar making big waves with extra-large Bonus-sized sweet berries on a high-yielding upright bush. May be the largest berry yet. Ripens a little after Elizabeth. Good in the home garden and prized by U-pick operations for how fast it fills a quart. Showing good disease resistance. Z4.

406A Bonus Blueberry, $14.50

Chandler Mid-Late. 5-6'. USDA, 1994. Very large excellent dark blue berries. High-yielding moderately vigorous upright bushes. Extended growing season over 4–5 weeks. Berry size will be smaller during a heavy crop. Not as hardy as the other varieties we offer but worth trialing in warmer areas of Zone 4. Z5.

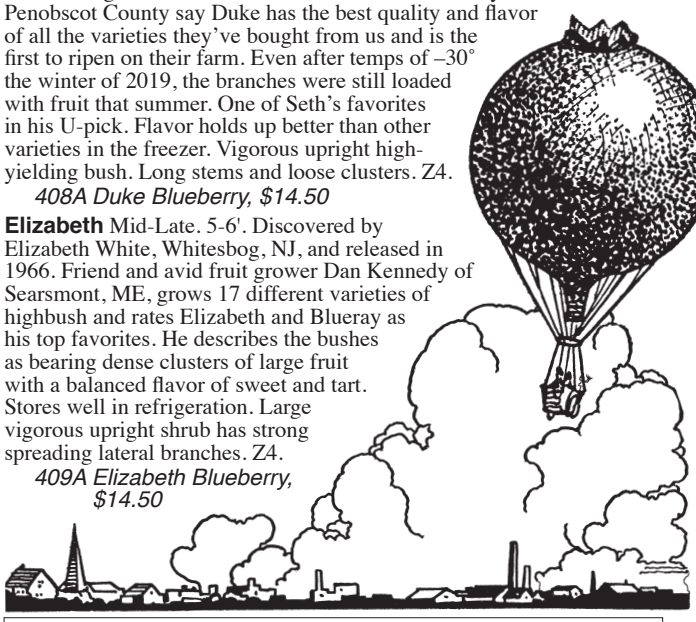
407A Chandler Blueberry, $14.50

Duke Early. 4-6'. G-100 (Ivanhoe x Earliblue) x 192-8 (E-30 x E-11) USDA, NJ, 1987. Considered a big improvement over Earliblue, once the standard for early berries, Duke scores high points from Maine blueberry growers. Medium-large light blue firm fruit with excellent sweet flavor. Long-time customers John and Debbie Whitney of Penobscot County say Duke has the best quality and flavor of all the varieties they've bought from us and is the first to ripen on their farm. Even after temps of –30˚ the winter of 2019, the branches were still loaded with fruit that summer. One of Seth's favorites in his U-pick. Flavor holds up better than other varieties in the freezer. Vigorous upright high-yielding bush. Long stems and loose clusters. Z4.

408A Duke Blueberry, $14.50

Elizabeth Mid-Late. 5-6'. Discovered by Elizabeth White, Whitesbog, NJ, and released in 1966. Friend and avid fruit grower Dan Kennedy of Searsmont, ME, grows 17 different varieties of highbush and rates Elizabeth and Blueray as his top favorites. He describes the bushes as bearing dense clusters of large fruit with a balanced flavor of sweet and tart. Stores well in refrigeration. Large vigorous upright shrub has strong spreading lateral branches. Z4.

409A Elizabeth Blueberry, $14.50



Lowbush Blueberry *Vaccinium angustifolium*

We are no longer carrying lowbush blueberry sod or plants. If you are interested in bulk orders of spring- or fall-dug sod, contact Ewing Fruit Co (ewingfruitco.com).

Elliott Very Late. 4-6'. Burlington x [Dixi x (Jersey x Pioneer)] USDA, 1974. A real season-extender. Considered the latest of all varieties, Elliott ripens two weeks after Jersey. Loose clusters of medium-sized very firm mild-flavored light blue berries. Slightly spreading somewhat bushy upright plant is highly productive every year, in part because it blooms late and escapes spring frosts. Z4.

410A Elliott Blueberry, $14.50

Jersey Mid-Late. 5-7'. Rubel x Grover. USDA, 1928. The beloved old standard of blueberry introductions to which new varieties are compared. Medium to large dark blue berries in large loose clusters. Vigorous erect hardy bush. Productive, adapted to a wide range of soils, highly praised, easy to grow and suited to the New England climate. Z4.

411A Jersey Blueberry, $14.50

Meader Early-Mid. 5-7'. Elwyn Meader intro, UNH Ag Exp Stn, Durham, NH, 1971. Medium-large medium-blue fruit with excellent flavor. Sweet with a hint of acid. Vigorous upright open lightly spreading form. Very hardy. Z4 or even Z3.

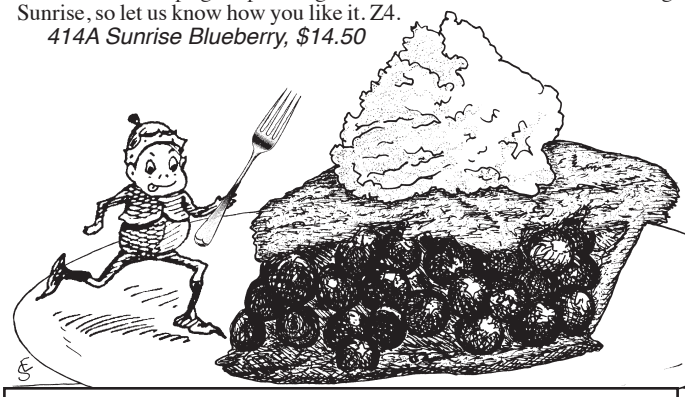
412A Meader Blueberry, $14.50

Patriot Early-Mid. 4'. US3 (Dixi x Michigan LB-1) x Earliblue (Stanley x Weymouth) UMaine, 1976. Partial lowbush parentage. Adaptable to many soil types. Large firm berries with excellent flavor. Productive upright open spreading bush. Tolerant or resistant to some strains of soil fungus. Hardy. Z3.

413A Patriot Blueberry, $14.50

Sunrise Early. 5-6'. USDA, 1978. Good quality early variety with medium-sized very flavorful deep blue berries. Extended ripening season of 4–5 weeks. Upright spreading form. This is our first time offering Sunrise, so let us know how you like it. Z4.

414A Sunrise Blueberry, $14.50

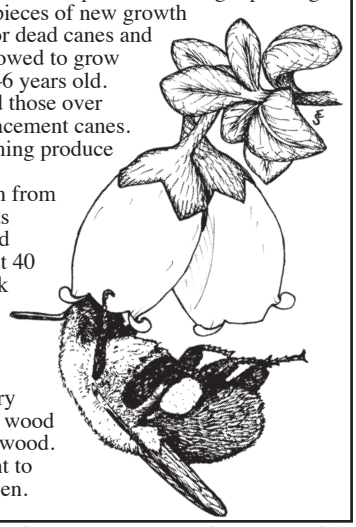


Growing Highbush Blueberries

Shallow-rooted, highbush blueberries like light acid soil (pH 4.0–5.2) with plenty of organic matter, good drainage, and plenty of water. Space them 3–6' apart (3' for the shorter varieties) in rows 8–10' apart. If your soil lacks acidity, add peat, leaf mold, or 1 cup elemental sulfur per bush.

Dig a hole at least twice the size of the root ball. If you use peat, soak it and then mix it with soil at a one-to-one ratio. Plant at the same depth as in the nursery. Do not let the roots dry out! Pack the soil firmly and water thoroughly. Plants require at least 1" water per week during the growing season. On most soils, blueberries require regular applications of nitrogen. In the spring, apply a high-nitrogen fertilizer, such as 1/2–1 qt composted hen manure per plant.

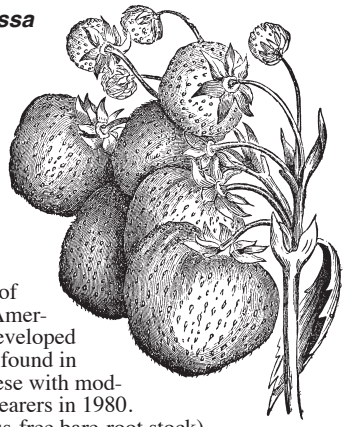
Fruit is produced on vigorous one-year shoots off healthy canes. As canes age they become twiggy and less productive. Begin pruning after three years. Head back long pieces of new growth for a bushier plant. Cut out weak or dead canes and dead tips. Each bush should be allowed to grow 6–10 canes varying in age from 1–6 years old. Thereafter, remove dead canes and those over 6 years old to encourage new replacement canes. Bushes with regular moderate pruning produce the most berries.



Berries may need net protection from birds. One of the best arrangements we've seen is John Meader's netted "house" in Buckfield. He has about 40 bushes growing under a framework made of posts and 2x4s and completely covered in netting.

Competition with grass may weaken and kill your blueberries. Mulch heavily (3–6" or more) every year with pine needles, cardboard, wood chips, hay, sawdust, even old slab wood. When using sawdust you may want to compensate by adding extra nitrogen.

Strawberries *Fragaria x ananassa*



A major highlight of every summer is picking strawberries. In central Maine strawberry season usually coincides with the summer solstice. Although no one knows where the common name *strawberry* originated, idle speculation is that it comes from the practice of putting straw down between the rows for pickers to sit on while they sample the fruit and catch up with each other.

Modern strawberries, developed about 1830, are a hybrid of *F. chiloensis* (native of Chile) and *F. virginiana* (native of North America). Royce Bringhurst of the UC-Davis developed everbearing strawberries from wild plants found in Utah's Wasatch Mountains. He crossed these with modern varieties and introduced the first everbearers in 1980.

50 plants will plant from 50–100'. (virus-free bare-root stock)

EVERBEARING STRAWBERRIES

Everbearing, or day-neutral, strawberries flower regardless of day length as long as temperatures are between 35 and 85°, and produce fruit from June to October. They are uncommonly productive—about 1 lb of fruit per plant the first year, and slightly less the second year. Productivity peaks in August the first year. The second year, berry size decreases in the hottest weather and increases in cooler weather. After second year, turn under and start again.

Albion CN220 (Diamante x Cal 94.16-1) UC-Davis, 2006. Everbearing strawberry with very large conical firm fruit, excellent flavor and good shelf life. High yielding though requires more water and nutrients than other everbearers. Fedco's Alice Coyle switched to Albion from Seascape and never looked back. She says, "The best Seascape will have better flavor than the best Albion, but Albion is definitely no slouch for flavor. It continues to bear reliably and produce large delicious berries in hot weather, when Seascape will stop producing, button up, or become bitter." Plants are large and need extra space to produce bigger berries. Resistant to verticillium wilt, phytophthora crown rot, and anthracnose crown rot. **PPA.** Z4.

L417A Albion Strawberry, bundle of 50, $21.00

Mara des Bois (Gento x Osara) x (Red Gauntlet x Korona) Hybridized by Jacques Marionett, Soings-en-Sologne, France, 1991. Everbearing strawberry claimed to be the most flavorful and fragrant of the day neutrals, often referred to as "gourmet." Berries are high in methyl anthranilate, the volatile compound that gives them their strong fragrance. Commercially grown in France where they are sold at a premium. Shorter shelf life makes them better suited for local markets. Plants bear medium-small glossy red berries prolifically from summer into fall the first year. Second year bears a heavy spring crop with continuously ripening berries throughout the summer. Z4.

L418A Mara des Bois Strawberry, bundle of 50, $21.00

Seascape CN 49. Developed by Royce Bringhurst, UC-Davis, 1991. Everbearing strawberry with bright red medium-to-long conic high-yielding firm productive reliable fruit. Excellent flavor. Broad resistance to fungal diseases. Somewhat susceptible to common leaf spot and two-spotted spider mite. Very hardy. Z3.

L419A Seascape Strawberry, bundle of 50, $21.00

JUNE-BEARING STRAWBERRIES

When cultivated as described in sidebar below, June-bearing plants begin bearing their second year and can produce for up to 5 years.

Earliglow Early. MDUS 3861 [MDUS 2359 (Fairland x Midland)] x [MD2713 (Redglow x Surecrop)] MD Ag Exp Stn, 1966. Medium-sized berries, best for fresh eating and freezing. Excellent flavor for an early berry. A favorite of strawberry growers Shaun and Benji at Sand Hill Farm. Resistant to red stele and verticillium wilt. Hardy, but considerably more productive in southern New England than up north. Z3.

L420A Earliglow Strawberry, bundle of 50, $21.00

Honeoye Early-Mid. NY 1409 (Vibrant x Holiday) NY Stn, 1979. Folks pronounce it *honey-eye*. Tough, hardy, vigorous, extremely productive and easy to grow. The freezer-filler of the strawberry patch. Produces large conic bright red fruit over a long fruiting season. Firm flesh with tart—and surprisingly good—flavor. Excellent freezing quality. A week before Jewel. Probably the most popular commercial berry in the Northeast. Plant in well-drained soil to avoid red stele. Susceptible to verticillium wilt. Z3/4.

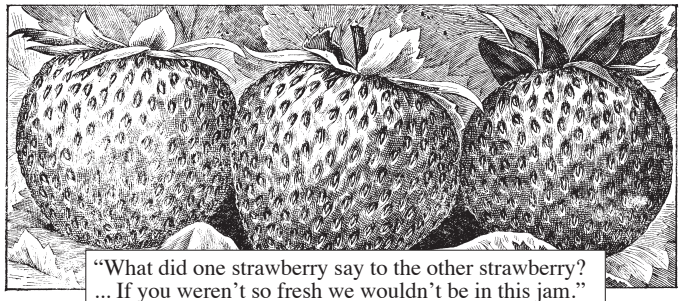
L421A Honeoye Strawberry, bundle of 50, $21.00

Jewel Mid-Late. NY 1324 [(Senga Sengana x NY E-58) x Holiday] NY Stn, 1985. Shaun Keenan of Sand Hill Farm suggested we add Jewel to our list; he even went so far as to say that Jewel tastes almost as good as Sparkle. Although we don't think we'd go quite that far, we were very impressed with the berry. Large shiny red perfectly shaped fruit is firm, sweet and slightly aromatic. Unlike Sparkle, Earliglow and many other varieties, Jewel keeps its size all season. Extremely popular with commercial growers and Gene's favorite. Good freezing quality. Low incidence of fruit rots and foliar diseases. Not resistant to verticillium or red stele. Z4.

L422A Jewel Strawberry, bundle of 50, $21.00

Sparkle Mid-Late. Fairfax x Aberdeen. NJ Ag Exp Stn, 1942. Although not a favorite with commercial growers because of moderate crop size and smaller berries, we've yet to taste a strawberry that comes even remotely close to Sparkle. They possess a flavor that can only be described as the essence of strawberry. The best in an early year, the best in a late year, the best this year, last year, every year. Soft berries make delicious fresh eating and are also excellent for jams and freezing. One of its few drawbacks is that it tends to lose color in the freezer. First fruit set is large; the rest are small. Resistant to most strains of red stele. Blooms late, rarely affected by spring frost. Z3.

L423A Sparkle Strawberry, bundle of 50, $21.00



"What did one strawberry say to the other strawberry? ... If you weren't so fresh we wouldn't be in this jam."
–Lori Connor, Deer Isle, ME

Growing Strawberries

Keep plants cold or refrigerate between arrival and planting. We ship with roots slightly on the dry side. If you cannot plant them for a while, uncover the roots, mist them with water and re-cover, leaving tops exposed. Place bundle in a paper bag and store on the bottom shelf of your fridge. Don't be alarmed if the tops become brown or mushy: they will generate new leaves.

Strawberries require good air drainage, well-drained fertile soil with pH of 5.8–6.2, thick mulch and full sun. Avoid soils where tomatoes, peppers or potatoes have grown in the past 4 years. Plant strawberries at the same depth as they were in the nursery, with the middle of the crown at soil level. Keep your patch free of weeds. They require 3/4–1" water per week during the growing season. Mulch with hay or straw in late fall to protect plants over winter. In the spring, pull mulch off plants and place between rows where it will keep fruit dry and clean during the summer. It can also be raked back over the plants if frost threatens flower buds. Floating rowcover may also be used for winter and frost protection.

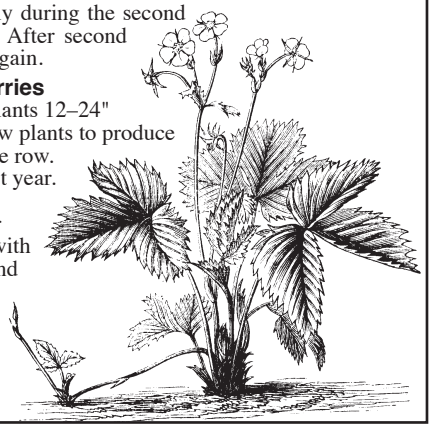
The 1895 Green's Nursery catalog recommends setting out strawberry plants in the evening. "Carrying plants about the fields in the glaring sun in the heat of the day, is a trying ordeal. If planted in the evening, the dews immediately fall upon plants and give opportunity for recuperation before the next morning's sun appears." We think this is good advice for all plants.

Everbearing or Day-Neutral Strawberries

These heavy feeders benefit from 3–4" of manure worked 4–6" into the soil prior to planting. Plant 6–12" apart. Mulch with black plastic or thick straw immediately after planting. Remove flowers for the first 6 weeks, and remove all runners the first season. Mulch in late fall. Sidedress with composted manure monthly during the second season beginning in May. After second year, turn under and start again.

June-Bearing Strawberries

Matted Row system: Set plants 12–24" apart in rows 3' apart. Allow plants to produce runners freely and fill in the row. Remove all flowers the first year. Harvest berries the second summer. Immediately after harvest, fertilize liberally with compost or aged manure and renovate the row. By hand or with a tiller, narrow the row to 12" wide. Thin plants to 4–5" apart within the row. By this method a bed can last about 5 years.



Grapes *Vitis* spp.

Grapes are easy to grow and can bear plentifully even in northern New England. They begin fruiting in the second or third year after planting. They are rugged and cold hardy. Our vines bear consistently every year. Although many people prefer seedless types for table use, seeded varieties can be quite enjoyable right off the vine if you don't mind "grape nuts." Grape seeds contain an antioxidant that is twice as powerful as vitamin C.

Most grape varieties are bred from a combination of different species, *V. labrusca* and *V. vinifera* being the most important. *Labrusca* is native to the eastern U.S., has a wild tart musky (foxy) flavor, and is hardy and disease resistant. Concord is the best-known of the *labruscas*. *Vinifera*, native to Europe, is extremely high quality, and is the most important wine grape in the world, but is not cold hardy and is prone to disease. *V. riparia*, native to North America, used as rootstock for grafted varieties and in hybridization with *vinifera*, is very adaptable to a wide range of soils, disease resistant and very cold hardy.

In central Maine, "very early" grapes begin ripening in mid-August, while "midseason" ripen mid-September. Late-season Concord, a standard elsewhere, does not ripen in many northern areas. **Grapes do not require a second cultivar for pollination.** (well-rooted vines)

Beta Mid. *V. riparia* x Concord. Originated by Louis Suelter in MN, 1881. Beta (pronounced *Bett-uh*, not *Bay-tuh)* was his wife. Old standby heirloom, excellent for juice, jelly and jam. Decent eating off the vine when completely ripe. Most Concord-like of all our northern varieties. Medium-sized black berries in moderately compact to loose clusters. Early to bloom, early to ripen. Vigorous healthy productive vines will cover an arbor in short order. Long even canes are ideal for basket-weaving. Extremely hardy. Z3.

425A Beta Grape, $15.00

Bluebell Mid. MN 158 (Beta x unknown) Developed by JM Dorsey, U Minn, 1944. Our most popular seeded grape; it does everything well. Delicious sweet flavor makes them excellent for fresh eating, jelly and juice. Clusters of medium-sized dark berries with a heavy blue bloom. Extremely hardy, to –30˚, *labrusca*-type ripens 2–3 weeks earlier than Concord. While it ripens beautifully from central Maine south, it may not have time to ripen in some northernmost locales. Strong, productive, vigorous—but not rampant—vine. A joy to grow. Immune to most or all fungal diseases. Z3.

426A Bluebell Grape, $15.00

Brianna Early-Mid. ES 7-4-76 (Kay Gray x ES 2-12-13) Iowa State U, 2001. Bred by Elmer Swenson in WI, selected in 1989. High-quality white wine grape that is also great for fresh eating. Medium-large round thick-skinned gold berries in medium-small tight clusters. As a wine grape, imparts pineapple and grapefruit flavors with very floral characteristics. French-American hybrid including *V. labrusca* and *V. riparia*. Vigorous vines are easy to manage. Z3/4.

427A Brianna Grape, $15.00

Canadice Seedless Mid. Bath x Himrod. NY Stn, Geneva, NY, 1977. Medium-large dense clusters of delicious red seedless berries. Sweet fruity flavor. Moderately vigorous, productive vine. We forgot about Canadice until two central Maine growers, Jerry Rodman of Litchfield and the late Adam Tomash of Gardiner, reminded us of how good a grape it is. John had trouble keeping it alive in his cold Palermo frost pocket, but it seems to be doing well in other Zone 4 sites. Thinning the crop will decrease plant stress and increase hardiness significantly. Ripens about a week after Reliance. Z4/5.

428A Canadice Seedless Grape, $15.00

King of the North Mid. *V. riparia* x Concord-type. Madison, WI. Very hardy dark-skinned table and wine grape originally named and offered by Jung's Nursery many years ago. Minnesota grower and winemaker John Marshall recommends King of the North as the one variety for both a good table grape and a decent red Concord-style wine. He says it's "very delicious particularly as a home wine." Produces light red sweet tasty juice. Ripens slightly later than Bluebell. Z3.

429A King of the North Grape, $15.00

L'Acadie Blanc Early. V-53621 (Cascade x Seyve-Villard 14-287) Ollie A. Bradt intro, Vineland Stn, Ontario, 1953. "The workhorse of Nova Scotia wine," according to *Curated Food & Drink Magazine*. Widely planted in Nova Scotia and parts of Quebec. Loose medium-sized clusters of golden-green grapes suited for a wide range of blended white wines or use as a single varietal. Fruity, crisp, mineral, with hints of apple and pear. Think Chardonnay. Uncommonly holds eight different types of *Vitis* species in its lineage. Perhaps this lends to its intense versatility. Hardy to –20˚. Recommended to us by local winemaker Brian Smith of Oyster River Winegrowers in Warren, ME. Z4/5.

430A L'Acadie Blanc Grape, $15.00

Marquette Mid-Late. MN 1211 (MN 1094 x Rivat 262) U Minn, 2006. This grape has northern winemakers buzzing with excitement. The best variety this side of the Atlantic for a Pinot-Noir–style red wine. One parent, MN 1094, has both *V. riparia* and *V. vinifera* in its background. The other, Rivat 262, is a French hybrid with Pinot Noir as one of its parents. Not only is Marquette heavy with *vinifera*, the vines are also extremely cold hardy. And there's more: sugar levels are high—in the range of 26.1 Brix—and the acid levels are lower than Frontenac. Substantial tannins add complexity. Small-medium bluish-black berries in small to medium-sized clusters. Ripens a few days before Frontenac. **PPA**. Z3.

431A Marquette Grape, $15.00

More Grapes next page.

Growing Grapes

For the best grapes, provide moderate fertility, very well-drained soil and full sun. Grapes prefer soils with pH of 5.8–7.0. Every June we thoroughly weed the grapes under our arbor, then mulch very liberally with old hay. After that, we don't do a thing to them except harvest in late summer and prune in late spring. Space 8–12' apart in rows 8–12' apart.

Spread the roots out, planting the crown even with the soil surface. Do not prune roots. Pack soil well. Water and mulch well. After frost danger has passed, prune vines back to 3–5 strong buds. Continue to mulch annually with hay or straw. Every few years fertilize liberally with granite dust.

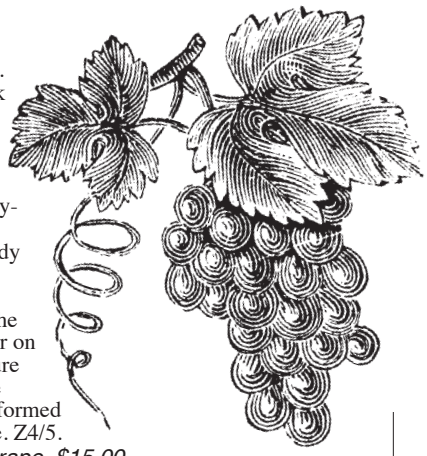
Grapes require annual pruning and a trellis or arbor, though in Italy they still sometimes grow them in maple trees. All systems for growing grapes involve removal of most growth in late spring to encourage new canes, as fruit is produced on these canes. There are many systems for training grapes. Some are suited to laying down and covering tender varieties over winter. Any good book on grape growing will show you several options. We suggest the Hudson River Umbrella or the Four-arm Kniffin system. The University of Maine offers a series of videos demonstrating different grape-training techniques. Go to: umaine.edu/highmoor/ and click on "videos."

People sometimes ask about wire. The current vineyard standard is high-tensile-strength class III galvanized steel wire. The gauge should be 11 to 12.5. The wire is generally sold by weight. 100 lbs of 11 gauge measures about 2600'. 100 lbs of 12.5 measures about 3800'.

Grapes rated for Zone 5 can be grown in Zones 3 and 4. To prevent winter injury, remove the vine from the trellis in fall, lay it on the ground, and bury with just enough soil to cover. To do this, plant your new grapevine at a 45˚ angle. Train new shoots horizontally for at least one foot. Then, curve shoots upward to form a J shape. This creates a flexible hinge, allowing you to lay the vine down at the end of the season.

For trellising ideas, see next page.

More Grapes



Reliance Seedless Very Early. Arkansas 1163 (Ontario x Suffolk Red) AR Stn, 1982. Medium-sized berries are good for fresh eating or juice. Large loose clusters of tender melting sweet pinkish-red fruit with a strawberry-like flavor. Stores well in a root cellar for 1–2 months. Seems hardy although it has shown significant dieback in our Zone 4 trials. You may need to lay vines down for the winter in colder areas (see sidebar on previous page). While the literature cautions about Reliance's disease susceptibility, our vines have performed well and remained free of disease. Z4/5.

432A Reliance Seedless Grape, $15.00

Somerset Seedless Early. ES 12-7-98 (ES 5-3-64 x Petite Jewel) Swenson intro. Somerset is likely one of the hardiest seedless dessert grapes available today. One of the last Swenson introductions before the renowned and beloved grape breeder passed away in December 2004. Medium-sized loose clusters with small sweet ruddy reddish-golden fruit. Crispy texture and great flavor. Easy to grow but not overly vigorous. Z4.

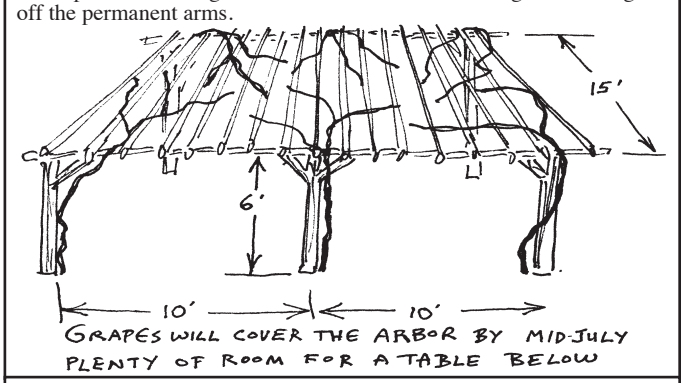
433A Somerset Seedless Grape, $15.00

Grape Collection Our pick of 4 varieties, individually labeled, a combo of hardy dessert and wine grapes.

436A Grape Collection, bundle of 4, $50.00

Training Grapes on an Arbor

Train one or more vines onto an arbor or gazebo; we have 8 vines, spaced about 10' apart. Prune each vine back to a single trunk. Encourage several permanent arms from each trunk. In late spring remove 70-90% of the past summer's growth. Next summer new fruiting canes will grow off the permanent arms.



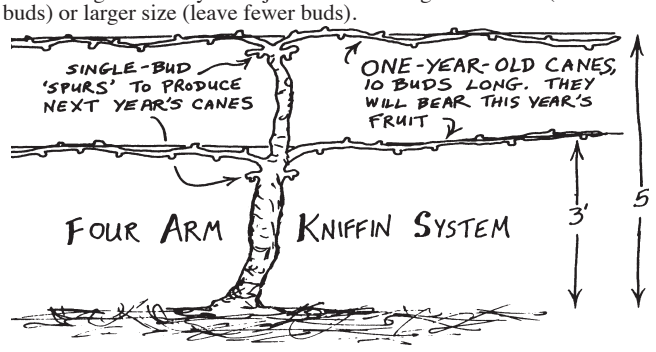
Pruning Grapes in the Four-Arm Kniffin System

First year: After the danger of frost has passed, cut newly planted vines back to a single stem, 6" long with two to three buds.

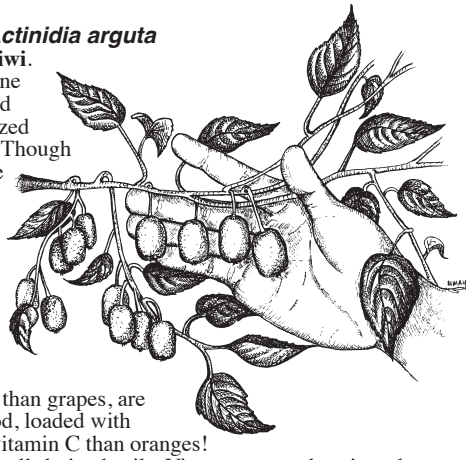
Second year: Set up two wires, 3' and 5' high, stretched between posts. Cut plant back to a single stem, 6 feet long and tie it to the top wire. Leave 4–6 buds near each wire and remove others.

Third year: Select 8 canes, 4 for each wire, and remove the rest. Tie two canes to each wire, one in each direction. Cut these 4 canes back to 10 buds each. Cut the remaining 4 canes back to 1–2 buds each.

Later years: In late spring, remove last year's fruiting canes. Select eight new canes. Cut 4 of them to 10 buds each, and tie them to your wires. Cut the remaining 4 back to 2 buds each. These will produce next year's fruiting canes. Remove all other canes. The number of buds left on the fruiting canes may be adjusted to encourage more fruit (leave more buds) or larger size (leave fewer buds).


SINGLE-BUD 'SPURS' TO PRODUCE NEXT YEAR'S CANES
ONE-YEAR-OLD CANES, 10 BUDS LONG. THEY WILL BEAR THIS YEAR'S FRUIT
FOUR ARM KNIFFIN SYSTEM
3'
5'

Kiwiberries *Actinidia arguta*



Also called **Hardy Kiwi**. Productive twining vine climbs 20' or more and produces juicy bite-sized fruits in late summer. Though much smaller than the fuzzy supermarket kiwi, kiwiberries are by no means lacking in flavor. Skin is smooth and edible. The longer they ripen on the vine, the sweeter they become. These nutrient-dense berries, a little bigger than grapes, are considered a superfood, loaded with vitamins, with more vitamin C than oranges! Easy to grow in rich well-drained soils. Vigorous enough to just about pull down a tree, so be sure to provide support. Will begin producing in 5–9 years. Mature plants may produce up to 100 lbs of fruit. Once vines are established, adequate pruning (see directions below) will significantly increase yields. No significant pest or disease problems.

Both male and female plants required for fruit. One male will usually pollinate at least three females of the same species. The females bear the fruit, which ripen around mid-September. Native to eastern Asia. (well-rooted transplants)

***A. a.* 'Anna' Female.** Also called **Ananasnaya**. Thought to be a hardy cross between *arguta* and *A. kolomikta*. The Russian name describes its taste: 'pineapple-like.' Tangy and sweet, almost entirely covered with a rusty red blush. Heavy yields are late to ripen, very end of September or early October. **Requires Meader male for pollination.** Z4.

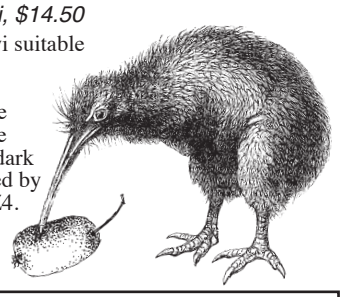
437A Anna Female Kiwi, $14.50

***A. a.* Geneva #3 Female.** NY Ag Exp Sta, Geneva, NY. Very productive and reliably hardy. Bright green fruits have excellent flavor. This was one of our favorites at UNH's Kiwiberry Fall Field Day last year. We offered it years ago and are excited to bring it back. **Requires Meader male for pollination.** Z4.

438A Geneva #3 Female Kiwi, $14.50

A. a.* 'Meader' Fruitless male** kiwi suitable for pollinating *arguta* females Anna and Geneva #3. **Will not pollinate A. *kolomiktas (which we offer some years). Extremely vigorous vines are often grown just for their beautiful dark green ornamental foliage accentuated by reddish-pink petioles (leaf stalks). Z4.

439A Meader Male Kiwi, $14.50



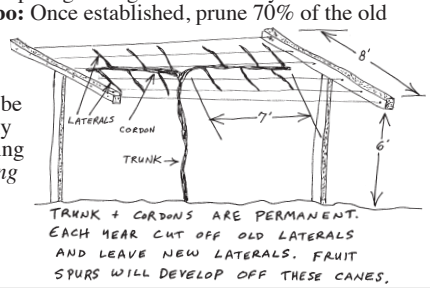
Growing Kiwiberries

Kiwis are dioecious vines, meaning male and female flowers are on separate plants, so you need a male plant to pollinate the fruiting female plants. They are extremely vigorous and require a rugged trellis or arbor and heavy pruning. Plant vines 15' apart each way in moist but well-drained soil. Kiwis are adaptable and tolerate a wide range of soil types (pH 5.0–6.5). One male will pollinate several females as long as they are within approximately 30' of the male. Although the vines are quite hardy, the flowers and foliage are frost sensitive. Planting on a northern exposure will delay budding in spring and reduce risk of frost damage. Protection from winter winds and intense winter sun is also recommended. Mulch with hay or wood chips. On poor soil fertilize with compost annually.

On a trellis: Train a single trunk to the trellis wires and then train two permanent 7–10' cordons (arms) off the trunk. Each winter remove at least 70% of old growth, leaving a dozen or so one-year-old laterals. Fruit will develop on fruit spurs growing off these one-year-old canes.

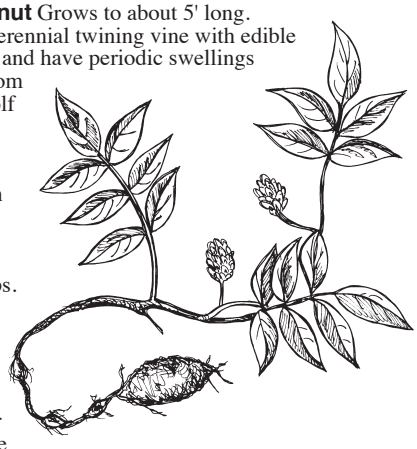
On an arbor or gazebo: Once established, prune 70% of the old growth each year and leave some new canes for this year's fruiting.

Summer pruning may be required to keep extremely rampant vines from choking out your farm. *The Pruning Book* by Lee Reich is an excellent reference for pruning kiwis.


8'
LATERALS
CORDON
7'
TRUNK
6'
TRUNK + CORDONS ARE PERMANENT. EACH YEAR CUT OFF OLD LATERALS AND LEAVE NEW LATERALS. FRUIT SPURS WILL DEVELOP OFF THESE CANES.

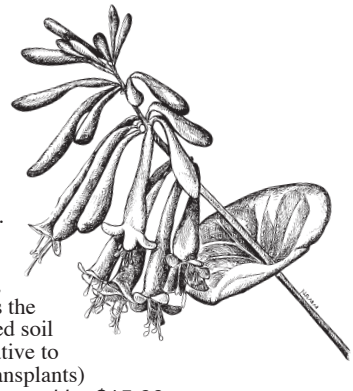
Hardy Vines & Creepers

***Apios americana* Groundnut** Grows to about 5' long. Nitrogen-fixing leguminous perennial twining vine with edible tubers. Roots grow 1–6" deep and have periodic swellings (the groundnuts) that range from marble size to larger than a golf ball. These edible tubers can be harvested any time of year. Delicious, high in starch, and contain three times the protein of a potato! Peel them first, then eat them boiled, roasted, baked, mashed, sliced, diced, puréed or even made into chips. Not recommended raw. Will keep a month or more in the fridge or root cellar, or dry them and they keep forever. Small orchid-like maroon, pink and violet flowers appear in late August in central Maine followed by 2–4" bean pods. Prefers moist sandy soil. Full to partial sun. Keep it out of your garden as it will spread. Can be vigorous and requires a trellis of some sort. Native to river banks and flood plains, southern Canada, eastern and midwestern U.S. Z3. **ME Grown.** (tubers)

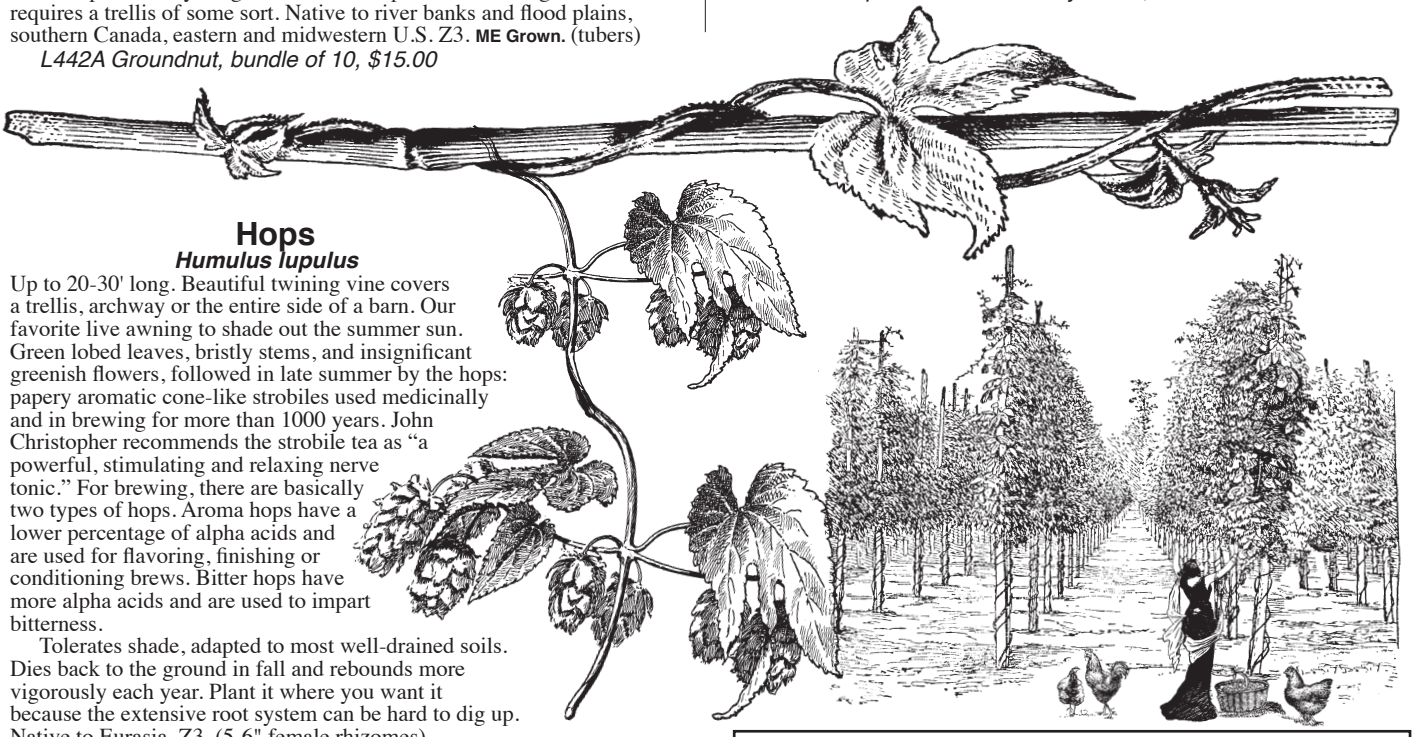


L442A Groundnut, bundle of 10, $15.00

***Lonicera* x *brownii* 'Dropmore Scarlet' Honeysuckle** 10-20' long. (*L. sempervirens* x *L. hirsuta*) Tall climbing (non-invasive!) honeysuckle developed by FL Skinner in Manitoba. Jazzy whimsical whorled clusters of 1½" scarlet-orange tubular flowers bloom profusely and tirelessly from early summer into late fall. Attracts butterflies and bees but especially loved by our ruby-throated hummingbird. Striking blue-green foliage is perfoliate, appearing as if the red stems were growing through a single cupped disk. Finely shredded peeling bark makes an interesting winter display. Great for fence or arbor or cut back like a perennial for a low rangy mound in the garden. Easy to grow, generally free of problems. Flowers the first year. Likes average well-drained soil and full sun. Both parent species native to North America. Z3. (well-rooted transplants)



447A Dropmore Scarlet Honeysuckle, $15.00



Hops

Humulus lupulus

Up to 20-30' long. Beautiful twining vine covers a trellis, archway or the entire side of a barn. Our favorite live awning to shade out the summer sun. Green lobed leaves, bristly stems, and insignificant greenish flowers, followed in late summer by the hops: papery aromatic cone-like strobiles used medicinally and in brewing for more than 1000 years. John Christopher recommends the strobile tea as "a powerful, stimulating and relaxing nerve tonic." For brewing, there are basically two types of hops. Aroma hops have a lower percentage of alpha acids and are used for flavoring, finishing or conditioning brews. Bitter hops have more alpha acids and are used to impart bitterness.

Tolerates shade, adapted to most well-drained soils. Dies back to the ground in fall and rebounds more vigorously each year. Plant it where you want it because the extensive root system can be hard to dig up. Native to Eurasia. Z3. (5-6" female rhizomes)

***H. l.* 'Cascade'** USDA 19124 (Fuggle x Serebrianka-Fuggle S) x open-pollinated. OR St U, 1972. Contains 4–7% alpha acids. Fragrantly aromatic hop, low bittering value. For years Cascade has been the most widely used hop in the beer industry. Very productive with large cones, ready to harvest mid-late August in central Maine. A customer wrote, "Cascade has gained impeccable renown as the charismatic hop in such unsurpassable ales as Anchor's Liberty Ale, Sierra Nevada's Pale Ale and McNeill's Firehouse Amber Ale. Nothing 'light' about these." Resistant to downy mildew.

L443A Cascade Hops, bundle of 3, $17.50

***H. l.* 'Magnum'** Galena x select German male. German Hallertauer hybrid, 1980. Very high bittering with good storability. Alpha content 12–17%. Strong bitter flavor with subtle hints of spice and citrus though not generally used as an aroma hop. Known for giving a clear and distinct bitterness that is not overpowering. Used in IPAs, pale ales, stouts and lagers.

L444A Magnum Hops, bundle of 3, $17.50

***H. l.* 'Willamette'** USDA 21003 x Fuggle Seedling 2-4. USDA, 1976. Alpha content 4–6%. Excellent all-purpose hop. Old English-style aroma with brewing characteristics similar to Fuggle. Low bittering. Spicy aroma. Good finishing hop for brewing English ales and stouts. Vigorous. Good disease resistance. **Indigenous Royalties.**

L445A Willamette Hops, bundle of 3, $17.50

Growing Hops

Refrigerate slightly moistened rhizomes in a plastic bag until planting. Hops prefer full sun and rich light well-drained soil with a pH of 6.5–8.0. As soon as soil can be worked in spring, till to create a weed-free area. Dig holes about 1' deep and at least 3' apart in rows. Add manure, compost and other slow-release organic fertilizers. Plant 1 or 2 rhizomes per hole, horizontally with the buds pointed up and cover with 1–2" of loose soil. The first year the hop plant requires frequent light watering and mulching.

Hops grow vertically, with lateral sidearms extending from the main vine and producing cones. Vines may grow up to 25' in a single season, and do best if they are trained onto strong twine 12–30' high, supported by a trellis, wire, pole, tree branch or south-facing building.

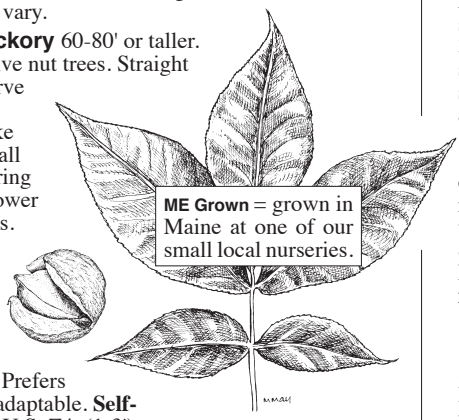
When the young vines are about 1' long, select the 2 or 3 most vigorous vines per hill and remove the rest. Gently wrap the vines clockwise onto a string. Once trained, the vine will guide itself.

Pick the hops when they are papery but still slightly sticky and filled with yellow powder. Harvest dates will vary with the variety and climate. Because most hops are produced out of reach from the ground, it is safest to lower the vines in order to pick the hops. Dry hops thoroughly before use. Spread on screens in a dry attic, they will dry in a few weeks. Dried hops freeze well.

Cut the vines back to the ground after they have been killed by frost. Each spring apply a hearty topdressing of manure and compost. To help control vigor, prune roots by cutting a 2–3' circle with a shovel around the base of the plant in spring.

Nuts

The nut seedlings we're offering are grown from nuts harvested from the most productive specimens. Like all seedlings, each one is a little different, and nut quality may vary.



ME Grown = grown in Maine at one of our small local nurseries.

***Carya ovata* Shagbark Hickory** 60-80' or taller. One of our most beautiful native nut trees. Straight trunked with branches that curve skyward at the tips. Not only does the bark shag, it looks like huge long strips are about to fall off. After the tree reaches bearing age, about 40 years, it will shower the yard with sweet edible nuts. Those left unharvested will likely be planted by local creatures, some four legged, some two. Rich yellow fall foliage. Slow growing but very long-lived. Tough wood used for making tool handles. Prefers rich well-drained loam but is adaptable. **Self-pollinating.** Native to eastern U.S. Z4. (1-3')

451A Shagbark Hickory, $16.00

***Castanea dentata* American Chestnut** Up to 100' Before 1900 American chestnut was one of the most important deciduous trees in the eastern U.S. The arrow-straight rot-resistant wood was used for everything from mine timbers to musical instruments. Delicious sweet nuts were an important food for wildlife and humans. Chestnut blight, an Asian fungus, showed up in Brooklyn in 1904; within 50 years it killed virtually every chestnut tree in the eastern U.S. The blight does not kill the roots however, and rare stands of mature trees can still be found. In July 2015, the tallest American chestnut in North America was discovered right here in Maine by researchers who spotted the profuse white blossoms from the air. The trees we offer are not immune but are likely to thrive in a suitable site for 10–30 years without blight. Fast growing and straight trunked with a wide-branching magnificent rounded crown. Fragrant white blooms in July. Ribbed sharp-toothed lustrous dark green foliage. Yellow fall color. Prefers loamy well-drained acidic soil and full sun. **Two or more needed for pollination** but will cross-pollinate with Asian and European chestnuts. Precocious, bearing heavy crops of nuts in 10 years. From each American chestnut purchase, Fedco will donate $3 to support TACF Chapter's traditional breeding program. Z4. **ME Grown.** (1-3')

452A American Chestnut, $22.50

Read more about chestnut breeding, next page.

Black Walnut Brittle

Modified from a recipe by Earl Barney, former member of the Northern Nut Growers Association of Nebraska and uncle to staff member Jen Ries. Earl left the planet in 2018 but left behind his lovingly tended landscape full of nut trees, here to stay for future generations to enjoy!

- 1 cup sugar
- 1/2 cup brown rice syrup
- 1 1/2 cups black walnuts
- 1 tsp butter
- 1 tsp vanilla extract
- 1 tsp baking soda

In a saucepan, heat sugar and syrup until they boil and sugar dissolves. Stir in nuts, and boil a few more minutes. Add butter and vanilla, and continue boiling and stirring until the mixture is golden brown. Add baking soda and stir gently until light and foamy. Pour onto lightly buttered cookie sheet.

Let it cool, then break into pieces, and store in an airtight container.

***Corylus americana* American Hazelnut** 12-18' x 10-15' Also called **American Filbert**. Squirrels, blue jays and humans alike relish the sweet tasty 1/2" nuts of this multi-stemmed rounded native shrub. Usually bears 3–5 years after planting. Collect the crop as soon as the husks begin to brown and lose their sticky yellowness. In central Maine that's around the third week of September. Showy catkins in spring. Dark green serrated foliage in summer. A patchwork of reds, yellows, oranges and greens in autumn. Suckers from the roots. Excellent for naturalizing in thickets. The main pest is nut weevil, which leaves a "hit" mark on the nut shell. (Raking drops and spraying Surround may help with this.) Prefers well-drained soils; pH adaptable. Full sun or light shade. May be self-fruitful but for best nut sets, **plant more than one**, 4–6' apart. Native to U.S. Z4. (1-3')

453A American Hazelnut, $16.00
453B American Hazelnut, bundle of 5, $68.00

***Juglans cinerea* Butternut** 40-60' x same. Very large impressive rounded shade tree produces edible nuts. Broad open crown, distinctive compound leaves on large arching branches that can hang nearly to the ground. Leafs out relatively late in spring. Use the oblong edible nut to make oil, or pickle the soft young nut for snacking. Husks yield a yellow-orange dye. Very nice cabinet wood referred to as **White Walnut**. Prefers moist rich deep soils but will grow in dry rocky conditions. Give it full sun and plenty of space. Susceptible to butternut canker, which has devastated many wild specimens. Some lovely old trees are thriving in Belfast and Belmont and may have been back-crossed long ago to include genes resistant to the canker. These seedlings were nuts that we harvested from some of those old Maine trees. **Self-fertile but plant two for more abundant crops.** Native New Brunswick to Georgia. Z3. **ME Grown.** (1-3')

454A Butternut, $17.50

***J. nigra* Black Walnut** 70-90' A spectacular shade tree with a magnificent open rounded crown of massive limbs with dark green leaves. Harder to crack than commercial English walnuts but worth the effort for their distinct sweet earthy rich flavor. Eat them chopped on fresh salads, or with dark chocolate for dessert. Highly valued cabinet and veneer wood. Husks, leaves and roots common in herbal medicine for anti-fungal properties. Husks also yield a rich brown dye. Deep taproot. Prefers moist well-drained soils, pH 6–7. Roots give off a compound called juglone that inhibits some plants, so don't plant one too close to your garden. Space trees about 50' apart for nut production, 20' apart for lumber. May begin to bear fruit in 5–10 years. Some say multiple trees needed for pollination but we've seen enough solo trees with large nut crops to say **you only need one**. Native to eastern U.S. though not quite into Maine. Z4. **ME Grown.** (1-3')

455A Black Walnut, $17.50

***J. regia* 'Carpathian' Walnut** 30-50' x 40' Species sometimes called **English Walnut** or **Persian Walnut**. Very large open somewhat vase-shaped fast-growing tree with those edible nuts you buy in the store. Traditionally used in Europe for salad oil. Has the same alternate pinnately compound foliage as black walnut but glossy blue-green leaves are larger and more rounded, almost tropical looking, and shells are a bit easier to crack. Prefers light deep dry loamy soil. Bears in 5–7 years. **Considered self-fertile but plant two for more abundant crops.** In the 1930s, this strain was brought to North America from the Carpathian Mountains in Poland where it was reputed to bear heavy crops even after –40° winters. Native from southeastern Europe east to China. Z4 or maybe Z3. **ME Grown.** (1-3')

456A Carpathian Walnut, $17.50

Cracking the Nut on Genetically Engineered Trees

Breeding for Blight Tolerance

by Eric Evans, Back-cross Breeding Coordinator, Maine Chapter of The American Chestnut Foundation

American chestnuts are wonderful trees, and their decline throughout eastern states due to a fungal pathogen from Asia in the early 1900s was one of the worst ecological disasters in our country's history. Development and distribution of blight-tolerant American chestnuts is a many-step, many-year process, using state-of-the-art science in breeding, silviculture, pathology, and molecular genetics. Eager to plant blight-tolerant American chestnuts, many Fedco readers have been following the progress of The American Chestnut Foundation's (TACF) breeding program. In the last few years there have been profound changes in these prospects. It is time now for a summary of the history, current status, and likely paths forward.

Since its founding in 1983, TACF has been coordinating a six-generation back-cross breeding program, both in TACF's research farms in Meadowview, VA, and in a dozen state chapters, including Maine. Chinese-American hybrid chestnuts were crossed back to American trees to dilute the unwanted Asian chestnut traits. At each back-cross generation, the Asian blight-resistance can be identified and the best trees saved for further back-crossing. TACF's founders based the program on research that suggested that blight resistance in Chinese chestnut is relatively simple and controlled by just two or three genes. This would have allowed recovery of blight resistance in each back-cross generation while also maintaining all other American traits.

However, last year TACF scientists reported that blight resistance is a much more complex trait than originally thought, and that it is controlled by many separate genes on at least nine chromosomes. The best 6th-generation Meadowview trees are less blight-resistant than Asian chestnuts and less American than the natives.

The Maine Chapter of TACF plans to complete the planting of 6,000 more trees from our back-cross orchards (4th-generation) into our seed orchards in the next 2–3 years, for a total of more than 50,000 trees. Using more stringent selection criteria based on genetic tests as well as field observations, we will remove the poorest of the 40 breeding lines from the existing seed orchard plots and from future planting plans. Our goal will be to find the best balance between increasing blight tolerance and maintaining American traits and high enough genetic diversity for wide adaptability in forest plantings. We expect to have trees from this program for extensive field and lab testing starting in about 2023.

In addition to this back-cross breeding, TACF is supporting work at State University of New York, College of Environmental Science and Forestry to develop disease-resistant chestnuts using genetic engineering (GE). They have added a single gene from wheat to the chestnut genome that produces an enzyme, oxalate oxidase (OxO), that neutralizes the oxalic acid that the blight fungus produces in its attack on chestnut bark. The result is trees that are blight-tolerant but are otherwise 100% American chestnut. Studies have revealed no differences between the trees with the OxO gene and native American chestnut trees. (More on this at esf.edu/chestnut)

Pending approval by federal USDA, FDA, and EPA expected in 2021-22, TACF plans to cross the GE chestnut with hundreds of native American chestnuts maintained in gene-conservation orchards by the state chapters to produce highly diverse populations of chestnut for restoration plantings in coming decades. Blight-tolerant OxO chestnuts could be available for small-scale plantings by 2022 and for large-scale forest plantings in the 2030s. This would be first-ever use of GE for species restoration and is viewed by some as a model to help rescue other tree species threatened by invasive pests. It's clear to me that GE use in many fields will increase in coming years and decades, and that our job should be to advocate for caution and evidence-based policy.

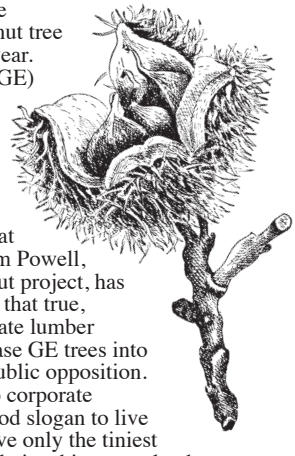
Eric is a longtime contact for Fedco and our liaison to regular updates on TACF ME Chapter's activities, as well as access to seed for our nurseries. He has dedicated many years to restoring the American chestnut. He continues to monitor orchards across Maine and to present important questions, hopes and concerns about the chestnut's future. His knowledge and dedication are an inspiration.

Fedco continues to support TACF's traditional back-breeding program but will not offer GE chestnuts.

Dark Hort? More Questions than Answers.

by Jen Ries, Fedco Trees Coordinator, on behalf of Fedco

The chestnut, an iconic tree of the American landscape, is poised to become a different kind of icon of a new era. A petition has arrived at the USDA asking for the release of the genetically engineered Darling 58 chestnut tree with hopes of approval within the next year. If accepted, the genetically engineered (GE) chestnut would become the first GE tree used in a restoration planting. This is unprecedented. Once that box is open, it cannot be closed. Please consider taking some time to inform yourself.



Is it an act of restoration when what is being "restored" is altered in a way that would never occur in nature? Dr. William Powell, lead researcher of the engineered chestnut project, has presented this as a tree for the people. Is that true, or is this a tree for *some* people? Corporate lumber companies have sought approval to release GE trees into the landscape and have been met with public opposition. The GE chestnut could open this door to corporate interests. ("Know Your Farmers" is a good slogan to live by; so is "Know Your Funders!") We have only the tiniest glimpse into how the intricate ancient relationships—evolved over millions of years—function among tree roots, fungi, insects and people, all of whom depend on the health of this dynamic system. We're looking at potentially disrupting this forever. Are we ready for this?

The absence of information is alarming. The potential for mutations with unknown impacts is vast. In 1999, Cornell reported that the pollen of Bt corn (engineered to carry *Bacillus thuringiensis*) was found to be toxic to monarch butterflies. This impact had not been measured before the corn's release. The pollen of GE trees will travel far and impart engineered genes to wild native trees. Will pest-resistant GE trees have a leg up on non-GE trees and lead to GE trees dominating the forest? GE lumber trees designed to produce less lignin could reduce costs and chemical inputs at the paper mill, but will the trees lack structural integrity, creating new problems and new genetic traits to be distributed into the forest? These are just hints at the concerns.

We want to right the wrongs of the past, but throwing incomplete science at the problems we've created has a sketchy track record. Remember when we were assured that PFAS sludge on our Maine fields was totally safe and would solve a recycling problem? DDT, Roundup-ready crops, fracking..."Better living through chemistry!" *What could possibly go wrong?*

Maybe GE is here to stay. If so, we must demand correct assessment, study and good policy implementation, as Eric stated in the previous column. Perhaps then we should be willing to put in 200–300 years to study the GE chestnut before we release it. In geologic time, this doesn't seem like a tall order, considering the impact of this decision on our wild forests. Maybe it's time to slow down, shift some patterns and reorganize our priorities. It's time to consider the impact of the way we consume and move materials around the globe.

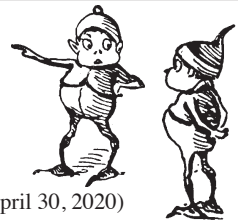
For decades now, Fedco has chimed in on the GE issue and how it threatens our environment and food systems. The GE chestnut is being presented for restoration, and perhaps considered not fundamentally linked to our food or seed systems. But we believe seed is seed, and food is food, whoever or whatever is eating it. *This matters.*

Fedco will not support GE trees. Furthermore, Fedco does not knowingly carry genetically engineered seeds. At our 1996 Annual Meeting, our cooperative voted unanimously not to knowingly offer for sale any genetically engineered variety because the new gene technologies pose unacceptable risks to the environment. For more about this pledge, our commitment to testing for GE contamination, and talks on GE by Fedco founder CR Lawn, please go to fedcoseeds.com/seeds/genetic_engineering.htm

You can find a short video and more info on why GE trees are a concern and sign a petition at stopgetrees.org/petition.

Read all about it!

- The Campaign to Stop GE Trees: stopgetrees.org
- American Chestnut Foundation-ME Chapter: acf.org/me
- The American Chestnut Research & Restoration Project at SUNY: esf.edu/chestnut
- econexus.info/publication/briefing-paper-transgenic-trees
- "Restoring the American Chestnut" *In Defence of Plants* podcast (Episode 272)
- "Poison or Progress" *Scientific American* (July 19, 1999)
- "Genetically Engineered Trees" *The Maine Organic Farmer & Gardener* (Winter 2005/2006)
- "Can Genetic Engineering Bring Back the American Chestnut" *The New York Times Magazine* (April 30, 2020)



Shade Trees

***Acer saccharum* Sugar Maple** 50-100' Largest of our native maples, also known as **Rock Maple**, valued for shade, syrup and lumber. A New England tradition was to plant a pair of sugar maples in front of the farmhouse on the inhabitants' wedding day. Those "wedding trees" still grace many Maine front yards. Famous for its yellow, gold, scarlet and crimson fall foliage and its fresh sap that's boiled down to make real maple syrup. Huge upright spreading form with light grey bark. Shade tolerant, making it easy to interplant in existing woods. Prefers moist well-drained soils. Cold hardy. Sensitive to salt and air pollution; not a good city tree. Native Quebec to Gulf Coast. Z3. (2-4')

461A Sugar Maple, $17.00

***Betula lenta* Sweet Birch** 40-80' x 35-45' Also called **Black Birch** or **Cherry Birch**. Graceful horizontal branches on a medium-sized tree with a rounded irregular wide-spreading crown. Glistening smooth reddish-brown to black bark forms scaly plates on mature trees. Lustrous dark green foliage turns splendid golden-yellow in fall. The best birch for birch beer, brewed from its copious sap. One of the main sources of oil of wintergreen. Chew the dormant twigs, or brew a delicious tea from twigs and leaves. Also valued as beautiful furniture wood. Pendulous 3–4" catkins dangle from the shiny bronze branches in spring. Prefers deep rich moist slightly acid well-drained soils, but adapts to most conditions except heavy clay. Sun to part shade. Native to eastern U.S. Z3. **ME Grown.** (2-4')

463A Sweet Birch, $17.00

***B. papyrifera* Paper Birch** 30-70' x 30' Also called **Canoe Birch** or **White Birch**. The classic birch tree. Elegant as a single- or multi-stemmed specimen. Medium-sized tree with an irregular oval shape, upright angled branches and magnificent chalk-white peeling bark. Deep green foliage produces light shade in summer and turns clear yellow in fall. Birds prize the catkins, buds and seeds. Twigs are a favorite deer browse. Bark traditionally used for building canoes, containers and roofing. When traveling in the north country, keep a small bundle of finely shredded bark in your pocket to kindle the nightly fire. Valuable wood at the sawmill. Twiggy branches, stuck into the ground, are perfect for pea fencing. Prefers moist well-drained acid soil though we've seen it thrive on ledge. Native to northern North America. Z3. **ME Grown.** (2-4')

464A Paper Birch, $17.00

***Ostrya virginiana* Eastern Hophornbeam** 20-40' x 15-20' Also called **Ironwood** and **Hardhack**. Not to be confused with *Carpinus caroliniana*, Musclewood, which is frequently referred to as hornbeam. An important small native upland understory tree that is tougher than nails. Called Ironwood because it was traditionally used for sled runners, wagon tongues (the part that hitched to the horses), longbows, and other rugged tools. We use it for ax handles. Moderately shaggy greyish-brown bark and birch-like leaves. In fall, the seeds mature in little papery cones resembling hops, providing winter forage for birds like the chickadee. Prefers well-drained acidic soil. Full sun or partial shade. Can be drought tolerant and thrive on thin gravelly soil, but water well for the first few years while it gets established. Tolerant of pollution and works well in yards. Native Nova Scotia to most of eastern U.S. Z3. **ME Grown.** (2-4')

465A Eastern Hophornbeam, $17.50

***Plantanus occidentalis* American Sycamore** 75-100' x same. Also called **American Planetree**, **Water Beech** or **Buttonball-tree**. Extraordinary native shade tree considered to be the largest indigenous hardwood in the U.S. The trunks and stems are a strikingly mottled patchwork of greenish-grey bark plates against chalky white background. Large 6"-wide lobed leaves resemble sugar maple. Branches twist and turn often at a sharp right angle. A remarkable show against the winter sky. Grows well in average moist well-drained soils in full sun but will tolerate light shade. Little brown fruiting balls turn fuzzy and disperse in the winter wind and are eaten by finches and juncos. We caught a few from a giant old grandmother tree growing up on the riverbanks of the Hudson River in upstate NY. These are her seedlings. Native to bottomlands and riverbanks Maine to Minnesota and south to Texas. Suffered minor dieback in our Zone 4 trials during winter 2019 but rebounded with vigor. Z4/5. **ME Grown.** (2-4')

466A American Sycamore, $17.50

***Quercus coccinea* Scarlet Oak** 50-70' x 40-50' Important wildlife canopy species of Appalachian mountains and highland terrain of oak-heath forests from southern Maine to Alabama. Rare in Maine, the northernmost limit of its range, where its few existing populations are endangered from development and logging. Considered part of the Red Oak group due to bristle tips on leaves and 2-year maturation of acorns. Leaves have 7–9 lobes and wide sinuses. Scarlet red foliage in fall. Dark grey bark has irregular ridges and reddish inner bark like the red oak. Wood is strong and heavy though coarsely grained. Requires dry acidic soil, likes sand—intolerant of alkaline soils. Full sun. Soon to be common in Central Maine?—see sidebar on page 43. Z5. **ME Grown.** (2-4')

467A Scarlet Oak, $17.50

***Salix alba* 'Tristis' Niobe Weeping Willow** 50x50' The classic weeping willow, a very large majestic graceful wide-spreading tree. Golden drooping branches, which can hang to the ground, are used for basket weaving; golden bark and leaves used medicinally. Harvest twiggy branches in early spring to make a tincture. Buzzes with life when May flowers attract loads of pollinating bees. Native to southern Europe and western Asia. Z4. (2-4') (More willows on page 48.)

468A Tristis Niobe Weeping Willow, $15.00

***Tilia americana* American Linden** 60-80' x same. Also known as **Basswood**, **Butterwood** and **Lime**. Tall stately long-lived tree with rounded crown and numerous low-hung spreading branches. Sweetly fragrant yellow June flowers will attract all the bees in the neighborhood, make the best honey, and also make a popular after-dinner tea and stomach remedy. Sprinkle them on your salad for a festive treat. The young half-size foliage makes a high-quality salad green. Excellent carving wood. Fibrous inner bark used for making cordage. Yellow fall color. Prefers deep rich moist soils. Full sun or partial shade. Sensitive to salt and pollution. Native from New Brunswick to Virginia. Z3. (2-4')

469A American Linden, $16.50

***Ulmus americana* 'Princeton' American Elm** 60x70' Princeton Nursery intro, 1922. Large fast-growing graceful native once lined virtually every street in New England but declined dramatically due to Dutch elm disease. Fortunately, several disease-resistant cultivars have been introduced. This one has been in the trade for almost a century, chosen for its high resistance to the disease. Good resistance to elm leaf beetles, too. At maturity the trunk can be 4' (even up to 8'!) in diameter with an immense vase-shaped canopy. Long pendant branches blow and sway in a hazy breeze on hot summer days. One of the most wonderful shade trees for northern climates. We're infatuated with them. If you find yourself in Castine, ME, visit the huge old elms lining every street; you'll feel like you stepped back in time. Soil adaptable, prefers moist areas along rivers and streams but also grows well in drier places. Salt and drought tolerant. Plant more elms! Z4. **ME Grown.** (2-4')

470A Princeton American Elm, $22.50

Conifers

***Abies balsamea* Balsam Fir** 45-75' One of the most abundant of our native conifers. Narrow, conical, smooth-barked. Twigs, inner bark, needles and sap are all medicinal. Small "blisters" contain a transparent aromatic resin that has been traditionally used as an inhalant for headaches and congestion, and as a salve for cuts and arthritis. Needle tea is rich in vitamin C. The fragrant boughs are a favorite for wreaths; the needles used in scented pillows and potpourri. The best of all conifers for a Christmas tree! Prefers well-drained moist acid soil. Avoid polluted areas. Semi-shade tolerant, slow growing. Good hedge or specimen tree, songbird nesting area or rabbit thicket. Native from Labrador to upper eastern U.S. Z3. (9-18")

475A Balsam Fir, bundle of 5, $19.25

***Picea abies* Norway Spruce** 80-100' Fast-growing wide-spreading upright picturesque tree with graceful long pendulous branches that often reach the ground. Largest of the spruces. If you go to the Mt. Auburn Cemetery in Cambridge, MA, don't miss the ancient Norway spruce just inside the front gate. Several of its massive drooping branches have rooted and turned into secondary trunks. It is truly amazing. Orange-brown scaly bark. Excellent lumber. Showy 4–6" cones. Bright green foliage. Plant in full sun to part shade. Prefers loam but tolerates poorer soils better than other spruces. Native to northern Europe. Z2. (9-18")

477A Norway Spruce, bundle of 5, $19.25

***P. glauca* White Spruce** 60-80' Conifer native to boreal forests, subalpine regions and Acadian forests of North America ranging from Alaska to Newfoundland. Northernmost trees nearly reach the arctic and will withstand winter lows of –70°. Diameter of trunk reaches up to 2'. One of the best trees for wind blocks and privacy screens. Wood commonly used for lumber, pulp and paddles. Harvest bright green spruce tips in late May to early June and process into citrusy sugar, syrup, vinegar or cordials. High in vitamin C. Adaptable and tolerant to wind, drought and cold. Full sun. Z2-6. **ME Grown.** (9-18")

478A White Spruce, bundle of 5, $19.25

***P. pungens var. glauca* 'Misty Blue' Colorado Blue Spruce** 30-60' Very popular specimen tree with truer blue foliage than other varieties. Excellent for privacy screens, as it is fast growing after 3'. A beautiful stand of blue spruce is on Rt. 139 in Benton, just before you cross the Sebasticook River. Plant in full sun to part shade. Does not like wet soil. Extra spring nitrogen will improve blue color, which doesn't appear for first few years. Native to western U.S. Z2. (9-18")

479A Misty Blue Colorado Blue Spruce, bundle of 5, $19.25

Agri-gel A hydrogel formulation that absorbs and holds water. The swollen crystals adhere to plant roots, reducing transplant shock. Safe, nontoxic, easy to use. Useful for garden seedlings as well as woody plants. Highly recommended for raspberries and conifers. Half-ounce packet mixed with 1 to 3 gallons of water will treat up to 100 cane plants, or 50 trees and shrubs. Not allowed for organic certification. 1/2 oz.

L664A Agri-gel, $3.00

***Pinus strobus* Eastern White Pine** 100-130' or more. The largest northeastern conifer. Magnificent and massive when mature. Smooth greyish-green bark becomes thick, rough and deeply furrowed with age. A cup of pine needle tea has more vitamin C than a cup of orange juice; Native Americans showed early white explorers how to brew it and stave off scurvy. The resin has numerous practical and medicinal applications. Excellent wood with a thousand uses. When grown in abandoned fields, "wolf pines" develop huge curving branches. Grown in the forest it will typically be "clear" for the first 30–80'. Planted thickly and sheared, it makes a beautiful hedge that won't drop its lower branches. Likes ordinary to poor—even sandy—soil. Shade tolerant, but does not like salt or roadsides. Fast growing. Native to eastern U.S. Z3. **ME Grown.** (9-18")

480A Eastern White Pine, bundle of 5, $19.25

***Thuja occidentalis* Eastern White Cedar** 20-60' Also called **Arborvitae**, which means 'tree of life.' Common throughout the entire state of Maine although some stands have been depleted by overcutting. Narrow and tall with twiggy branches, soft fibrous orange-brown bark, and flat foliage unlike that of any other conifer. Foliage and bark tea is high in vitamin C and helps fight infections. Twig decoction makes an antiviral antifungal skin wash. Valuable light fragrant wood, the standard for fence posts and log cabins in Maine. Slow growing, lives up to 400 years. Good for screens and hedges. A favorite browse of deer. Pruning limbs and leaving them on the ground during a harsh winter helps sustain these animals and is a long-practiced tradition in the forests of Maine. Thrives in rich moist marshy neutral-to-alkaline soils. Plant in full sun to part shade. Z2. (9-18")

481A Eastern White Cedar, bundle of 5, $19.25

Growing Conifers

Conifers tolerate a wide range of soil conditions, but prefer a pH between 5.5–6.5. If you are planting in dry or well-drained areas, dip tree roots in a solution of Agri-gel before planting to protect roots from drying out. Do not use Agri-gel in heavy clay soils or wet areas. Do not soak conifers in the Agri-gel solution; a good dipping is sufficient.

Before planting, prune off a third of the roots. Dig a small hole or make an incision with a spade or planting bar and slip the tree in to the level it grew in the nursery, never below. Fan the roots out; do not wind them around in the hole. It is better to prune the roots than to crowd them in the hole. Water well and pack the earth down with your feet to remove air pockets.

Young conifers need 3/4–1" of rain per week. Periodic deep waterings are far more beneficial than frequent sprinklings. Fertilization is not necessary in the first year. In later years you may fertilize around the drip line.

To make evergreens dense and compact, remove central leader and center bud on the end of each side branch.

Ordering Instructions

Order online at fedcoseeds.com/trees.

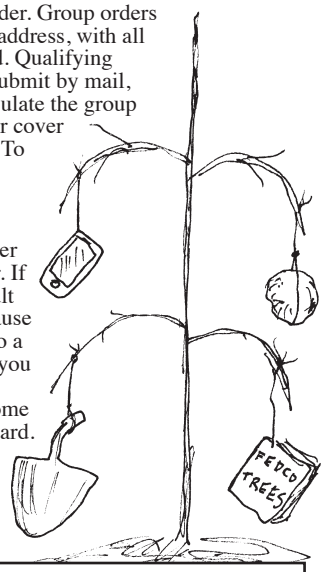
Or mail your order form to: **Fedco Trees, PO Box 520, Clinton, ME 04927.**
Please use a current catalog, as prices and selection vary year-to-year!
• Use the 2021 order form; submit as many pages as you need using our exact format. Print an order form from our website to make this easier.
• Keep a copy of your order for your records.
• We do not take fax or phone orders.

Volume discounts apply to orders submitted by January 15, 2021 with subtotals of $100 or more. Must be shipped to one address only. Sorry, no volume discounts on later orders. See order form for details.

Scionwood orders and early shipment of rootstock: Order online or use the order form on pages 37-38.

Group orders

Talk your neighbors into going in on an order. Group orders are processed as one order shipped to one address, with all group member parts individually packaged. Qualifying discounts apply to the group subtotal. To submit by mail, collect all order forms for your group, calculate the group totals onto an additional order form as your cover sheet, and send it all in with one payment. To submit online, visit fedcoseeds.com/trees/groups.htm.



Substitutions

When dealing with live plants, we can never be certain that we can fill your entire order. If something becomes unavailable, our default mode is to substitute a similar variety because most people prefer a similar tree or plant to a refund. On the order form, if you indicate you don't want any substitutions, we'll send a refund. You'll have the option to donate some of your refund to the Maine Heritage Orchard.

Tax Exemption

Farmers: Please send us a copy of your farm exemption. Otherwise we must charge sales tax.

Shipping Restrictions

Some states have restrictions on imported plants. Please check this list to make sure you're not trying to order something that's restricted in your area.

*** We do not ship any plants outside the U.S. ***

AZ: *Carya* spp. Hickory; *Juglans* spp. Walnut
CA: *Carya* spp. Hickory; *Castanea* spp. Chestnut; *Juglans* spp. Walnut; *Pinus* spp. Pine; *Quercus* spp. Oak
CO: *Artemisia absinthium* Wormwood. Some counties prohibit *Prunus* spp. Cherry, Peach, Plum. Please check your county regulations.
CT: *Valerian officinalis*
FL: *Castanea* spp. Chestnut; *Cornus* spp.; *Quercus* spp. Oak
GA: *Vaccinium* spp. Blueberry, American Cranberry
ID: *Humulus lupulus* Hops; *Vitis* spp. Grape
IN: *Rosa* spp. Rose **(Yes, we can resume general shipping to IN!)**
KS: *Juglans* spp. Walnut
MI: *Abies* spp. Fir; *Vaccinium* spp. Blueberry, American Cranberry, Lingonberry
MT: *Pinus* spp. Pine
ND: *Artemisia absinthium* Wormwood
NJ: *Rosa* spp. Rose
NM: *Carya* spp. Hickory
NY: *Vitis* spp. Grape
OR: *Castanea* spp. Chestnut; *Corylus* spp. Hazelnut; *Humulus lupulus* Hops; *Sambucus nigra* European Elderberry; *Vaccinium* spp. Blueberry, American Cranberry; *Vitis* spp. Grape
SD: Some counties prohibit *Artemisia absinthium* Wormwood. Please check your county regulations.
TX: *Carya* spp. Hickory; *Juglans* spp. Walnut
WA: *Artemisia absinthium* Wormwood; *Castanea* spp. Chestnut; *Corylus* spp. Hazelnut; *Humulus lupulus* Hops; *Vaccinium* spp. Blueberry, American Cranberry, Lingonberry; *Vitis* spp. Grape

Plants in soil medium cannot be shipped to the following states: AK, AL, AR, AZ, CA, HI, ID, KS, MS, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA.

The following plants come in soil: *Achillea millefolium* 'Oertel's Rose' and 'Terra Cotta'; *Actinidia* spp. Kiwiberry; *Alcea* Hollyhock; *Asarum canadense* Wild Ginger; *Calluna vulgaris* Heather; *Cornus canadensis* Bunchberry; *Delphinium*; *Digitalis mertonensis* Strawberry Foxglove; *Gallium odoratum* Sweet Woodruff; *Gaultheria procumbens* Wintergreen; *Monarda punctata* Dotted Horsemint; *Pulsatilla vulgaris* Pasque Flower; *Rubus* Nelson Blackberry; *Salix* spp. Willow (except Niobe Weeping) ; *Schisandra*; *Sempervivum* Hens & Chicks; *V. corymbosum* Highbush Blueberry; *V. macrocarpon* American Cranberry; *V. vitis-idaea* Lingonberry

Deadlines

• Volume discount deadline is January 15, 2021.
• Scionwood order deadline is February 19, 2021.
• Final order deadline (except scionwood) is March 5, 2021.

Pickup

We are no longer offering a pickup option.

Shipping Rates

• We ship via FedEx or USPS Priority Mail; our choice unless you specify.
• **Maine** customers now pay only a $10 flat-rate shipping fee.
• **Alaska** shipments are sent via USPS Priority Mail. Please include a postal address. *This rate also applies to anyone in the Lower 48 who requires postal delivery.*

• **Small & Light shipping** applies only to orders that exclusively contain item numbers beginning with L: perennials, bulbs, strawberries, rhubarb, hops, asparagus, scionwood, and more. If you order any other items in addition to these, you must pay the regular shipping charges.

Shipping Schedule

• Scionwood and early rootstock orders ship **around March 15**.
• We ship everything else **approximately March 30 through April 23**. We begin with warmer areas, working our way to coldest areas last. We do not ship outside of this range of dates.
•If you provide an email address, you will receive an automatic email confirmation with the FedEx or USPS tracking number when it leaves our warehouse.
• If you're in New England, your order may take 1-2 business days to arrive. Outside New England, it may take several business days.

• **No Special Ship Dates!** We cannot accommodate specific ship date requests or guarantee your order will arrive on a certain day. If you are out-of-town during our shipping dates, consider having your plants shipped to a friend or neighbor to care for them until you return.
• ***New!*** We will keep our website updated with our **approximate** shipping schedule by state so you can get an idea of when your order will ship. Check our website in the spring for more info.

Out of Stocks

We fill all orders on a first-come first-served basis. Some customers wonder why we don't contact them when something on their order is out of stock. We understand the disappointment. Some of our stock arrives in November to be stored through the winter, but much more of it arrives in early spring just before—or even during—shipping. When we don't know about a shortage or crop failure or damage until the last minute, it's impossible to contact customers individually. We will issue you a refund. Please accept this as a condition of ordering.

Handling Charges

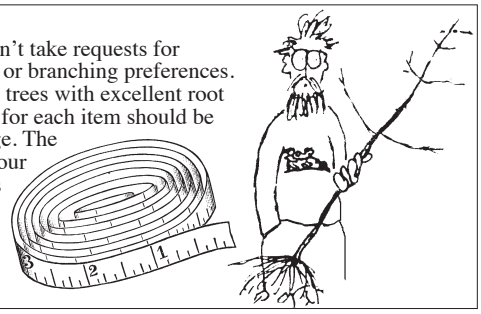
We charge $10 for handling each time you adjust your order. Additions and deletions are costly for us to process. You are welcome to place as many separate orders as you wish.

Cancellation Policy

If you must remove items after our final order deadline, we will charge a $20 fee. If you must cancel after the deadline, we will retain a $20 fee or 20% of the order total, whichever is greater. *Please don't make us do this*. Unlike most businesses, we take orders from this catalog for about five months and then fulfill them all in a span of a few weeks. When we receive last-minute cancellations or order reductions after we've closed for ordering, we can't exactly restock the plants we've designated for your order.

Plant Sizes

Unfortunately, we can't take requests for particular plant sizes or branching preferences. We grade for healthy trees with excellent root systems. Sizes listed for each item should be considered an average. The trees and shrubs in your order will sometimes be slightly larger and occasionally smaller than these projections.



Order form missing? Download another from fedcoseeds.com/requests.htm.

Fedco Trees 2021

PO Box 520 Clinton, ME 04927
www.fedcoseeds.com

(From mailing label) CC-

Farm or Group Name

Name

US Mail Delivery Address

Town St Zip

Street Address (if different)

Town St Zip

Phone

Email

FEDCO TREES
Garden · Farm · Orchard

Volume discount cutoff:
January 15, 2021
Final order deadline:
March 5, 2021

Visit **fedcoseeds.com** to check product availability.

Delivery:

☑ **Ship** in late March to mid/late April.
Sorry, no pickup option or Tree Sale in 2021.
Maine customers only: $10 flat-rate shipping!
We cannot accommodate specific ship date requests.

Substitutions:

	Yes	No
I will accept a similar variety.	❑	❑
I will accept similar rootstock. (Applies to apple trees only.)	❑	❑

Volume Discounts: *(only orders received by* **1/15/21***)*

Subtotals $100 and over	take 5% off
$300 and over	take 10% off
$600 and over	take 15% off
$1200 and over	take 20% off

Shipping Rates

Maine	*New!* $10 flat rate for all ME orders.	
	Adjusted Total	**Shipping Charge**
Continental US (other than Maine)	Up to $141.00	$22.50
	Over $141.00	16% of Adjusted Total
Alaska or **postal delivery required**	Up to $125.00	$25.00
	Over $125.00	20% of Adjusted Total
All item #s begin with **L** **Small & Light Shipping**	Up to $63.00	$10.00
	Over $63.00	16% of Adjusted Total

Sales Tax:

ME addresses	—	Pay 5.5% sales tax on Adjusted Total
MD, VA	—	Pay your local tax rate on Adj Total
IL, IN, KY, MA, MI, MN, NC, NJ, NY, OH, PA, RI, VT, WI, WV	—	Shipping is taxable – pay your local tax rate on **Adj Total + Shipping**

Subtotal from reverse	
Volume Discount	–
1% Fedco Member Discount from Subtotal (see back cover)	–
Adjusted Total	=
Shipping	+
Sales Tax	+
Total	=
Donate to MeHO (Maine Heritage Orchard, see p. 14)	+
Donate to Wild Seed Project (see p. 63)	+
Grand Total	=

- **We ship via FedEx or Priority Mail, our choice.**
- If you *require* postal delivery, use the Alaska/Postal rates.

Payment:

- We accept payment by check, money order, or credit/debit card.
- Please makes checks payable to **Fedco**.
- Orders under $25: please pay by check or money order.

We accept Visa, MasterCard, American Express and Discover Card. Exp. Date

Help support
Maine Heritage Orchard
by donating refunds for out-of-stock items or overpayments.

❑ Donate all my refund to MeHO
❑ Donate up to $5.00
❑ Donate up to $2.00

Fedco Trees 2021: Trees, Shrubs & other Plants

For **scionwood and early shipment of rootstock**, order online or use the next form.

	Item #	Qty	# Plants per pkg	Name	Price Each	Total Price
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
					Subtotal	

If you are ordering more than 28 items, copy this page or our format and submit as many pages as you need. You can download another form at fedcoseeds.com/requests.htm.

If you order *only* item numbers beginning with **L**, you qualify for our **Small & Light shipping rate**. See other side for details.

Order Comments:

Fedco Trees 2021

Scionwood

PO Box 520 Clinton, ME 04927

www.fedcoseeds.com

Orders for scionwood and early shipment rootstock must be submitted by

February 19, 2021

(From mailing label) CC-

Farm or Group Name

Name

US Mail Delivery Address

Town St Zip

Street Address (if different)

Town St Zip

Phone

Email

Delivery:

☑ Ship around March 15.
Sorry, we cannot ship scionwood at other times.

Shipping Rates		
Maine	*New!* $10 flat-rate for all ME orders.	
	Adjusted Total	**Shipping Charge**
All item #s begin with **L** **Small & Light Shipping**	Up to $63.00	$10.00
	Over $63.00	16% of Adjusted Total
Continental US (other than Maine)	Up to $141.00	$22.50
	Over $141.00	16% of Adjusted Total
Alaska or **postal delivery required**	Up to $125.00	$25.00
	Over $125.00	20% of Adjusted Total

Sales Tax:		
ME addresses	—	Pay 5.5% sales tax on Adjusted Total
MD, VA	—	Pay your local tax rate on Adj Total
IL, IN, KY, MA, MI, MN, NC, NJ, NY, OH, PA, RI, VT, WI, WV	—	Shipping is taxable – pay your local tax rate on **Adj Total + Shipping**

Scionwood Total (from reverse)	
Rootstock Total (from reverse)	+
Subtotal	=
1% Fedco Member Discount (see back cover)	–
Adjusted Total	=
Shipping	+
Sales Tax	+
Grand Total	=

(Please make checks payable to **Fedco**.)

Scionwood, or scions, are twigs for grafting. They are $5 each and are approximately 8" long. **For larger quantities consider buying by the foot**: 10-foot minimum per variety, $4.50 per foot. Scionwood quantities are limited, so order early.

We will ship scionwood and early rootstock orders around March 15, 2021. Scionwood-only orders may ship a little sooner; orders with rootstock may ship a little later. Remain calm. **You will receive an email notification when your order ships.** We routinely send scions and rootstock during cold and freezing weather. They are fine in their packaging no matter how low the temps are during shipping. It's also not unusual for packages to be delayed by snowstorms. Even if your order spends an extra couple days in transit or your scions have icicles hanging off of them, the plant material will still be OK to use. However, **we are not responsible for the quality of plant material in the event your package is not promptly picked up or opened.**

Please note: We try to provide wood that is close to ¼" in diameter. When only smaller wood is available and we consider it usable, we send it. We do not issue refunds or replacements based on diameter of wood. Nature is variable and some varieties do not grow large wood. We expect that you know how to graft and will adjust your grafting methods to meet the materials. If the wood is too small to use the whip-and-tongue method, let the bark slip on the stock and make a bark graft instead. No refunds for leafed-out rootstock—it's fine for use.

- **We ship via FedEx or Priority Mail, our choice.** If you *require* postal delivery, use the Alaska/Postal rates.
- **For more information about storing and collecting scionwood**, see page 39.
- **For descriptions of scionwood varieties**, please check our website: fedcoseeds.com/trees.
- **For grafting supplies**, please refer to our Seeds & Supplies catalog, or visit fedcoseeds.com/ogs.

We accept Visa, MasterCard, American Express and Discover Card. Exp. Date

Help support the Maine Heritage Orchard:

- ☐ Donate all my refund to MeHO
- ☐ Donate up to $5.00
- ☐ Donate up to $2.00

Fedco Trees 2021: Scionwood

Apples	# sticks	# feet
L-801 American Summer Pearmain		
L-802 Arabskoe		
L-803 Arkansas Black		
L-804 Aroostook Sunset		
L-805 Ashmead's Kernel		
L-806 Baldwin		
L-807 Beacon		
L-808 Bitter Pew		
L-809 Black Oxford		
L-810 Blenheim Orange		
L-811 Blue Pearmain		
L-812 Brandywine		
L-813 Brock		
L-814 Bullock		
L-815 Burgundy		
L-816 Calville Blanc d'Hiver		
L-817 Canadian Strawberry		
L-818 Cap of Liberty		
L-819 Centennial		
L-820 Champlain		
L-821 Chenango Strawberry		
L-822 Cherryfield		
L-823 Chestnut		
L-824 Cole's Quince		
L-825 Cora's Grand Greening		
L-826 Cortland		
L-827 Cox's Orange Pippin		
L-828 Cranberry Pippin		
L-829 Dabinett		
L-830 Deane		
L-831 Drap d'Or		
L-832 Duchess of Oldenburg		
L-833 Early Strawberry		
L-834 Empire		
L-835 Esopus Spitzenburg		
L-836 Fallawater		
L-837 Fameuse		
L-838 Frostbite		
L-839 Gala		
L-840 Garden Sweet		
L-841 Gnarled Chapman		
L-842 Golden Russet		
L-843 GoldRush		
L-844 Gravenstein		
L-845 Gray Pearmain		
L-846 Grimes Golden		
L-847 Haralson		
L-848 Harrison		
L-849 Harry Masters Jersey		
L-850 Hewe's Virginia Crab		
L-851 Honeycrisp		
L-852 Honeygold		
L-853 Jonathan		
L-854 Kavanagh		
L-855 Keepsake		
L-856 Kennebec Russet		
L-857 King David		
Column 1 Total		

	# sticks	# feet
L-858 King of Tompkins County		
L-859 Kingston Black		
L-860 Kola		
L-861 Krameri Tuvioun		
L-862 Liberty		
L-863 Macoun		
L-864 Maiden Blush		
L-865 Martha Crab		
L-866 McIntosh		
L-867 Medaille d'Or		
L-868 Melrose		
L-869 Milden		
L-870 Milo Gibson		
L-871 Munson Sweet		
L-872 Mutsu		
L-873 Nehou		
L-874 New Brunswicker		
L-875 Nodhead		
L-876 Northern Spy		
L-877 Opalescent		
L-878 Oriole		
L-879 Otterson		
L-880 Pewaukee		
L-881 Pipsqueak		
L-882 Pomme Grise		
L-883 Porter's Perfection		
L-884 Red Astrachan		
L-885 Red Blaze		
L-886 Red St. Lawrence		
L-887 Redfield		
L-888 Rhode Island Greening		
L-889 Ribston Pippin		
L-890 Richmond Pink		
L-891 Roxbury Russet		
L-892 Screen Shot		
L-893 Spice Sweet		
L-894 St. Edmund's Russet		
L-895 St. Lawrence		
L-896 Starkey		
Column 2 Total		

	# sticks	# feet
L-897 State Fair		
L-898 Summer Sweeting		
L-899 Sweet Alford		
L-900 Sweet Sixteen		
L-901 Tolman Sweet		
L-902 Trailman		
L-903 Tydeman's Red		
L-904 Vista Bella		
L-905 Wealthy		
L-906 Westfield Seek-No-Further		
L-907 Whitney Crab		
L-908 Wickson		
L-909 William's Pride		
L-910 Windham Russet		
L-911 Winekist		
L-912 Winn Russet		
L-913 Winter Banana		
L-914 Wolf River		
L-915 Yarlington Mill		
L-916 Yellow Bellflower		
L-917 Yellow Transparent		
L-918 Zabergau Reinette		
Pears		
L-919 Bartlett		
L-920 Beurre Clairgeau		
L-921 Cabot		
L-922 Comptesse Clara Frijs		
L-923 Dana Hovey		
L-924 Duchesse de Berry d'Ete		
L-925 Gorham		
L-926 Kaspar's Winter		
L-927 Louise Bonne d'Avranches		
L-928 Luscious		
L-929 Nova		
L-930 Patten		
L-931 Stacyville		
Column 3 Total		
Total Number Ordered		

$ Total Sticks @ $5.00 ea.	$
$ Total Feet @ $4.50/ft (Minimum 10 feet per variety)	$

Scionwood sticks are around 8" long with a 1/4" caliper when possible. $5.00/stick.

For larger quantities, order by the foot for $4.50/foot. (10' minimum per variety)

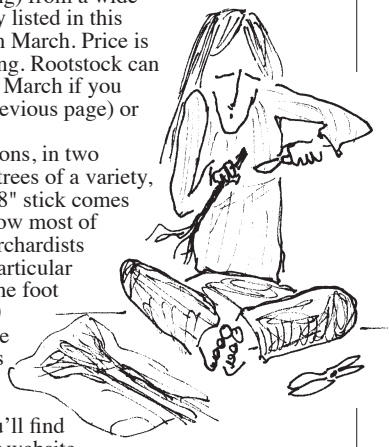
ROOTSTOCK – Bundle of 10

Rootstock is approximately 1/4" caliper.

See page 39 for descriptions.

Rootstock	Price	Qty	$Total
268-B Malus Antonovka	$29.50		
269-B M. Budagovsky 118	$29.50		
270-B M. M111	$29.50		
271-B M. Geneva 11	$33.50		
272-B M. Budagovsky 9	$29.50		
273-B Prunus americana	$29.50		
274-B Prunus avium	$29.50		
275-B P. cerasifera	$29.50		
276-B Pyrus OHxF97	$29.50		
Bundles Ordered			

Scionwood



We offer scionwood (twigs for grafting) from a wide selection of fruit trees including many listed in this catalog. Scionwood is shipped only in March. Price is $5.00 per stick (about 8") plus shipping. Rootstock can be sent with your scionwood order in March if you order it from the Scionwood form (previous page) or select that option online.

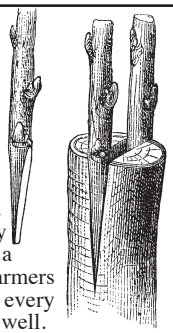
We sell scionwood, also called scions, in two ways. For those grafting up to 3 or 4 trees of a variety, one 8" stick will suffice. Each single 8" stick comes with a small paper ID label. This is how most of our customers purchase scions. For orchardists grafting large numbers of trees of a particular variety, we also offer scionwood by the foot ($4.50 per foot, minimum order of 10 feet). In our own nursery work, we are usually able to graft about 6 or 8 trees from one foot of scionwood.

The list of this year's scionwood offerings is on the previous page. You'll find descriptions for these varieties on our website.

We collect the scionwood in winter and store it at about 40° until shipment in March. You can graft right away or store it for later use. Stored properly, it will keep quite well for several weeks. It needs to be kept in the fridge or in a cold dark basement, root cellar or shed. Storing scionwood at freezing temps can be okay (we have friends who stick theirs in a snow bank), but the very cold temperatures in a freezer will kill it. It will also die if it dries out or is stored without special protection from ripening veggies or fruits. We recommend triple-bagging your scionwood in plastic bags, no matter where you store it. There is no need to dampen the scionwood or to insert wet paper towels before bagging it.

- Deadline for ordering scionwood is February 19, 2021.
- Scionwood will be shipped to you around March 15.
- **Scionwood varieties** are listed on form, previous page.

Scions are not trees!

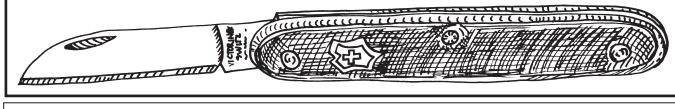


Scions are twigs, not trees. They have no roots and will not grow if you plant them. They are cuttings from branch tips collected in the winter, intended for grafting in the spring.

Is grafting easy? Yes and no. It is an acquired skill. Experienced grafters often have 100% "take" (success rate) with their grafting. Beginners often have less than 50% take—or even zero. While you can learn to graft from a book or video, we highly recommend the old-fashioned way of learning: find a real person to teach you. MOFGA (Maine Organic Farmers and Gardeners Association) has grafting classes every spring. Other organizations around the country do as well.

There are two general ways to graft fruit trees in spring. You can **bench graft** by grafting scionwood onto bare-root rootstock. Generally we do this indoors in late March or early April. We keep the little grafted trees packed into a bucket of damp sawdust in a warm spot in the house (77–86°) to break dormancy and promote callus development. Then we harden them off in a cold (but not freezing) place for a week or two before planting out in the nursery in mid-to-late May. In a couple of years when the trees are 3–4' tall, we plant them in the orchard. You can grow your own rootstock from seed or purchase it from us. You can also **topwork** scionwood onto established trees. We do our topworking after the trees have begun to show some green growth, usually about May 10 in central Maine.

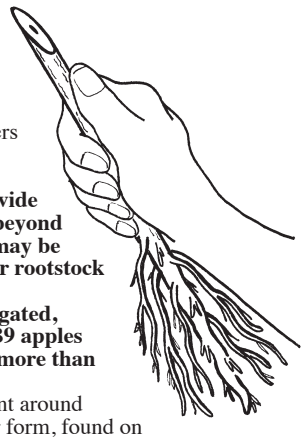
Can you collect your own scionwood? Of course! Grafting can open up a whole new world for you. You can purchase scionwood from Fedco and several other suppliers around the country. You can trade scionwood like you would baseball cards or recipes. And, best of all, you can collect your own scionwood from your favorite trees. We're always on the lookout for interesting varieties to graft. Before long, you may even become completely obsessed like many of us at Fedco! We offer grafting supplies in our Seeds & Supplies catalog or online: **fedcoseeds.com/ogs**.



The Scionwood Exchange and grafting workshop, an annual event held in the exhibition hall of MOFGA's Common Ground Education Center in Unity, ME, is provisionally set for Sunday, March 28, 2021. Hosted by Fedco, the Maine Tree Crop Alliance and MOFGA.

Visit mofga.org for updates regarding this and other MOFGA events.

Hardy Rootstocks



We consider these to be some of the best rootstocks for home or commercial use. Even without grafting, any of these produces fruit suitable for wildlife. For rootstocks not listed, or for larger calipers or larger quantities, please write for information.

Please note! We do our best to provide 1/4" caliper stock. Because of factors beyond our control (such as weather!) stock may be 3/16–3/8". We cannot guarantee scion or rootstock diameter.

Because of the way they are propagated, clonal rootstocks (B118, M111, G11, B9 apples and OHxF97 pear) rarely come with more than a few roots.

You may order rootstock for shipment around March 15 by using the scionwood order form, found on the previous page. Rootstock ordered on the regular order form in this catalog, page 35, will be shipped with the rest of the Tree order later in March or April. Both options are also available online.

***Malus* 'Antonovka'** (Apple) Hardy Russian seedling rootstock for full-sized "standard" apple trees. The hardiest rootstock we offer. Space trees 20–30' apart. Z3.

268A Malus Antonovka, bundle of 10, $29.50

***Malus* 'Budagovsky 118'** (Apple) [Moscow Pear x (M8 and M9 pollen)] Michurinsk College of Ag, Michurin, Russia. Also called **Bud 118** or **B118**. Semi-dwarf rootstock, about 85–90% of standard. Sometimes referred to as a "semi-standard" or even a standard. Space trees 20–25' apart. More productive and precocious (fruits at a young age) than trees on Antonovka. Very winter hardy and soil adaptable. Generally not used in commercial orchards due to its large size. Note that reddish cambium does not scrape green like other rootstocks. Resistant to collar rot. Unknown susceptibility to fireblight. Z3.

269A Malus Budagovsky 118, bundle of 10, $29.50

***Malus* 'M111'** (Apple) [Northern Spy x Merton 793 (Northern Spy x East Malling11)] Collaborative intro of East Malling Research Stn and the John Innes Institute, Merton, England, about 1950. Technically named MM111, the MM refers to Malling and Merton. Very popular semi-dwarf rootstock produces a tree about 65–80% of standard. Space trees 15–20' apart. No staking necessary. Slightly more precocious than standards. Well anchored and adaptable to a wide range of soils. Resistant to woolly aphid. Not nearly as long-lived as standards. Hardy to Z4, maybe Z3.

270A Malus M111, bundle of 10, $29.50

***Malus* 'Geneva 11'** (Apple) Also called **G11**. Cornell U intro, NY. Dwarf rootstock produces a tree about a third the size of standard, about halfway between M9 and M26 (a bit larger than Bud 9). Space trees 8–10' apart. Suckers only slightly. Moderately susceptible to woolly aphid. Excellent fireblight resistance. Requires staking, weeding and watering in most locations. Z4/5.

271A Malus Geneva 11, bundle of 10, $33.50

***Malus* 'Budagovsky 9'** (Apple) [M8 x Red Standard (Krasnij Standart)] Also called **Red-leafed Paradise** or **Bud 9**. Michurinsk College of Ag, Michurin, Russia, 1946. Dwarfing rootstock, produces a tree about a quarter the size of a standard tree. Highly productive and precocious with large fruit size. Very hardy though not as hardy as Antonovka. In most locations, requires weeding, mulching, staking and irrigation. Space trees 5–10' apart. Note that reddish cambium does not scrape green like other rootstocks. Some resistance to fireblight. Z4.

272A Malus Budagovsky 9, bundle of 10, $29.50

Prunus americana (Plum) Seedling rootstock for American, Japanese or hybrid plums. Also recommended for grafting peaches. Seedling plum produces very decent 1" fruit without grafting. The best pollinator for hybrid plums. (See explanation in plum section on page 22.)

273A Prunus americana, bundle of 10, $29.50

***Prunus avium* 'Mazzard'** (Cherry) The rootstock we use for grafting sweet and pie cherries. Shallow spreading root system. Longer lived than Mahaleb though not as hardy. Does not do well in heavy poorly drained soils. Z4/5.

274A Prunus avium Mazzard, bundle of 10, $29.50

***Prunus cerasifera* 'Myrobalan'** (Plum) Seedling rootstock for European plums. Not recommended for American or hybrid plums. Z3.

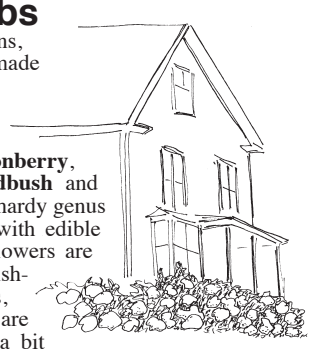
275A Prunus cerasifera Myrobalan, bundle of 10, $29.50

***Pyrus* 'OHxF97'** (Pear) (Old Home x Farmingdale 97) Produces a vigorous hardy well-rooted almost-standard-sized tree. Superior to *Pyrus communis* in numerous ways, and can be used for both European and Asian pears. We use "97s" for our Fedco catalog offerings. Z3/4.

276A Pyrus OHxF97, bundle of 10, $29.50

Small Trees and Shrubs

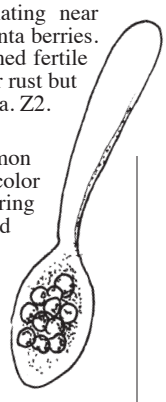
As Green's Nursery catalog from 1904 explains, "there are many trees that by pruning can be made to resemble shrubs, and many shrubs that by different pruning may be made to produce medium-sized trees."



Amelanchier Also called **Juneberry**, **Parsonberry**, **Serviceberry**, **Saskatoon**, **Shadblow**, **Shadbush** and **Shad**. Folks downeast call it Wild Pear. Very hardy genus of spring-flowering shrubs and small trees with edible berries. Beautiful fragrant 5-petaled white flowers are early harbingers of spring in Maine. Purplish-black sweet berries good in pies, cobblers, jellies, jams, smoothies and cakes. Berries are about the size of a lowbush blueberry, or a bit larger, and seedier. Popular with wildlife. Nice red-orange fall color. Thrives along stream beds as well as on rocky slopes. Tolerates partial shade, salt, pollution and wet spots but not standing water. Considered to be self-fruitful but we recommend planting with other Amelanchiers to ensure pollination. Taxonomy of Amelanchiers are a point of confusion in the nursery trade where common names and even botanical names are used interchangeably. Furthermore, these plants easily hybridize with each other in nature. Below, we've highlighted salient features of each species. (1-3')

A. alnifolia **'Regent' Juneberry** 4-6' x same. J. Candrian intro, Faribault, MN, 1997. An open-pollinated seedling originating near Regent, ND. Compact prolific shrub with sweet purple-magenta berries. Fruit ripens in mid-July in central Maine. Plant in well-drained fertile soil and full sun. Foliage somewhat susceptible to leaf spot or rust but this doesn't affect fruit. Native to northwestern North America. Z2.

485A Regent Juneberry, $15.50



A. laevis **Allegheny Serviceberry** 15-25' The most common Amelanchier in Maine. The unique purplish-orange bronzed color of the unfolding leaves on this understory tree is a favorite spring sight. Pendulous white blossoms precede the young leaves and are followed by berries that ripen in midsummer. Referred to as Shad or Shadbush by old-timers because the blossoms coincide with the spring shad run in certain Maine streams. Likes well-drained acid soils along the edge of fields, streams and roads. Native midwest to eastern U.S. and Canada. Z2. **ME Grown.** **Indigenous Royalties.**

486A Allegheny Serviceberry, $15.50

Aronia **spp. Chokeberry** Aronia has gotten a lot of press in recent years as a superfruit: it has wonderful medicinal qualities, works well in a range of culinary applications and is an important wildlife plant in the native landscape. Both red (*A. arbutifolia*) and black (*A. melanocarpa*) chokeberries are edible when cooked, but we emphasize the red for wildlife, while the black may be a better choice for medicine and food. Black chokeberries are commercially cultivated for their high levels of antioxidants and myriad health benefits. Both species are small rounded shrubs with blueberry-sized fruit and electric-red fall foliage. Begins to bear fruit in its third year and increases to full yield around five years. Ripens in late July or early August. If not harvested, the berries will hang on the bushes until songbirds eat them in late winter. Will form colonies. Not particularly picky about where it grows: adaptable to moist or dry areas, sun or partial shade. Native to eastern U.S. Self-fruitful. Z3/4. All are **ME Grown.** (1-3')

A. arbutifolia **'Brilliantissima'** 6-8' x 3-4' In *The Best of the Hardiest*, John Sabuco calls red chokeberry "one of our finest native landscape shrubs." Upright multi-stemmed form. Dense clusters of small white flowers with red stamens. Birds love the abundant persistent glossy bright red fruit. With "brilliant" fall foliage, this plant is the best alternative to the invasive burning bush.

487A Brilliantissima Red Chokeberry, $15.00

A. a. **Red Chokeberry Seedlings** 6-10' x 3-6' Each one is genetically unique. Beautiful in mass plantings and borders. Plant several in a hedge and make the birds happy! (*Note:* Rooted cuttings were taken from an assortment of seedling plants.)

488A Red Chokeberry Seedling, $15.00
488B Red Chokeberry Seedlings, bundle of 5, $67.00
488C Red Chokeberry Rooted Cutting, $14.00

A. melanocarpa **'Viking'** 4-6' x same. Introduced in Sweden. Upright vigorous high-yielding shrub produces very large dark tasty berries.

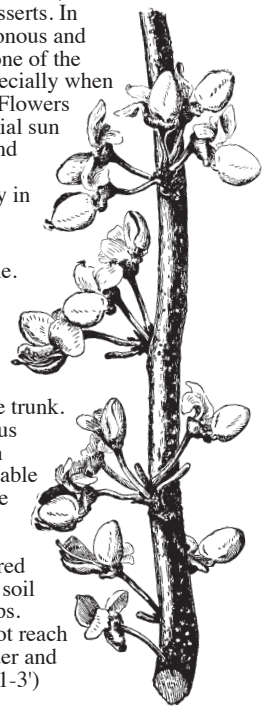
490A Viking Black Chokeberry, $15.00

A. m. **Black Chokeberry Seedlings** 3-6' x same. Each one is genetically unique. Plant several for an attractive edible hedge.

491A Black Chokeberry Seedling, $15.00
491B Black Chokeberry Seedlings, bundle of 5, $67.00

Calycanthus floridus **Carolina Allspice** 6-10' x 6-12' Beautiful aromatic native shrub with unique 1" dark burgundy-maroon flowers and shiny polished leaves. Begins blooming shortly after breaking dormancy in early spring and continues through much of the summer. Upright flowers resemble small magnolias with petals spiraling into similar-looking sepals, a characteristic of many primitive plants. Leaf, bark and flowers all highly fragrant of an aroma resembling spiced apples. Bark is edible, tastes very similar to cinnamon bark, and can be used the same way to spice puddings, toast and desserts. In warmer regions fruit will develop but is poisonous and should be avoided. Dirr considers this plant one of the great treasures of eastern North America, especially when allowed to grow into a large open specimen. Flowers on new wood so best pruned in summer. Partial sun and moist rich soil. Native to stream edges and woodlands of southeastern U.S. Our trials in central Maine are so far proving it to be hardy in some microclimates of Zone 4. Z4/5. (1-3')

494A Carolina Allspice, $15.50



Cercis canadensis **Redbud** 25-30' x same. Small vase-shaped single- or multi-stemmed tree is highly ornamental with edible flowers and seeds. In early spring, clusters of small brilliant purplish-pink pea-like flowers are so abundant they fill the entire tree, dotting the branches and even coming right out of the trunk. Flowers edible raw or cooked. Flat leguminous 2–3" pods have roastable edible seeds high in antioxidants. Nitrogen-fixing tree is also valuable as an early-season nectar plant for bees. Large heart-shaped leaves emerge opaque pink, mature to deep green and turn yellow in fall. Smooth dark bark becomes plated and brick-red with purple undertones. Sun or partial shade, soil adaptable. Fine as a specimen tree or in groups. Native to central and eastern U.S. and may not reach full maturity size in northern areas. Very tender and only marginally hardy in Zone 5. **ME Grown.** (1-3')

495A Redbud, $17.00

Clethra alnifolia **'Ruby Spice' Summersweet** 4-5' x same. Sport of 'Pink Spires', Broken Arrow Nursery, Hamden, CT, 1992. Also known as **Sweet Pepperbush**. Red buds and beautiful spires of heavenly scented deep-pink flowers appear on racemes for six weeks in midsummer. Bees and butterflies love it. Whorls of extremely attractive finely serrated distinctly veined glossy dark green foliage turn deep gold in fall. Dangling racemes of "black peppercorns" persist into the next growing season. Erect oval habit, often suckering to form dense colonies. Slow growing. Prefers acid moist well-drained soils. A good shrub to border streams and ponds. Will tolerate salty coastal conditions. Full sun to shade. Easy to grow. Species native Maine to Florida. Z3. (1-3')

496A Ruby Spice Summersweet, $16.75

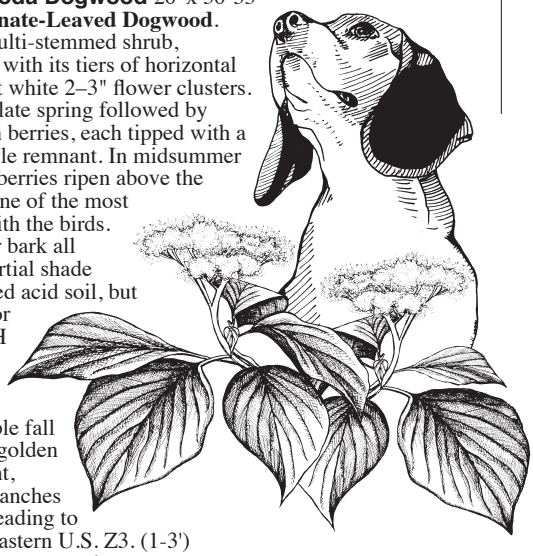
Plant Sizes All of our woody plants are well-rooted bare-root plants. Some shrubs may be a bit shorter than the specs given, and some hardwoods may be much taller. Because of the nature of living plants, size variations will naturally occur within each crop.

ME Grown = grown in Maine at one of our small local nurseries.

***Cornus alba* 'Bud's Yellow' Dogwood** 6-8' x 5-6' COPF intro. Selection made from a seedling stand near Boughen Nurseries, Saskatchewan. Also called **Tatarian Dogwood**. Luminescent yellow stems are brightest in winter and sought out for winter plant arrangements. Round flat flower cymes up to 2" wide appear in early spring as the smooth glossy green deeply veined foliage emerges. Small white drupes are visible in summer. Suckers and spreads over time and can be used where erosion control is needed. Annual pruning is recommended for keeping stem color bright. More resistant to canker than *C. sericea*. Very adaptable to a wide range of soil conditions. Full sun to partial shade. Native to Asia. Z3. (1-3')

497A Bud's Yellow Dogwood, $14.50

***C. alternifolia* Pagoda Dogwood** 20' x 30-35' Also known as **Alternate-Leaved Dogwood**. Small tree or large multi-stemmed shrub, particularly beautiful with its tiers of horizontal branches and fragrant white 2–3" flower clusters. These appear in mid-late spring followed by immature olive-green berries, each tipped with a tiny bright yellow style remnant. In midsummer clusters of dark blue berries ripen above the blue-green foliage. One of the most popular dogwoods with the birds. Roots, bark and inner bark all medicinal. Prefers partial shade and moist well-drained acid soil, but tolerates full sun, poor soil and even clay. pH adaptable. Excellent naturalized as a specimen or in groups. Reddish-purple fall color. Susceptible to golden canker: when dormant, prune out diseased branches to prevent spores spreading to the trunk. Native to eastern U.S. Z3. (1-3')



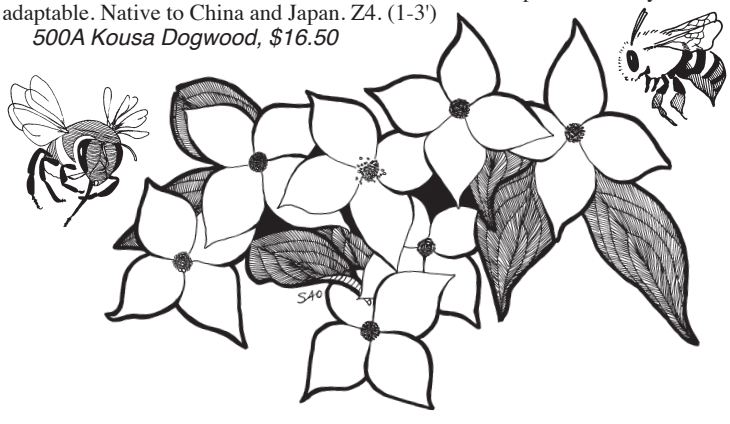
498A Pagoda Dogwood, $16.50
498B Pagoda Dogwood, bundle of 5, $70.00

***C. amomum* Silky Dogwood** 8-12' x same. Large rounded long-limbed shrub best suited for naturalizing borders, streams and wetlands. Effective for erosion control, wildlife or pollinator habitat. Medium-fast growing. Creamy white 2" cymes bloom in late spring followed by dark blue berries in midsummer. Glossy deeply veined green foliage turns dark purple in fall. Maroon bark is visible in winter. Whether it's the flowers, fruit, or even just the foliage, Silky can be a charming addition to natural areas and songbirds love the berries. Not considered quite as ornamental as other dogwoods, yet the Silkies planted by Fedco grower Sharon Turner along a woodland trail in dappled light are always eye-catching. Prefers moist well-drained soils but will tolerate wet locations. Does not like overly dry areas. Suckers and spreads. Sun or partial shade. Native to eastern U.S. Z4. **ME Grown.** (1-3')

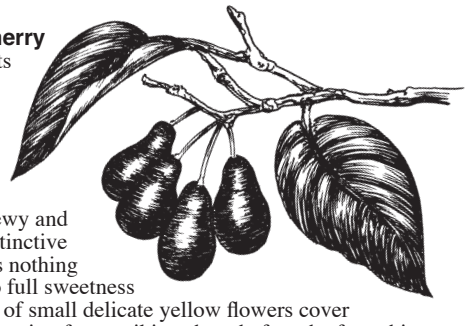
499A Silky Dogwood, $15.00

***C. kousa* var. *chinensis* Kousa Dogwood** Seedling 20-30' x same. Also referred to as **Chinese Dogwood**. Introduced by EH Wilson, Hubei, China, 1907. Horizontally spreading small specimen tree or large shrub covered with layers of 3–5" milky-white blossoms for up to 6 weeks in early summer. The pointed bracts give blossoms a starlike appearance followed by deep pink edible exotic fruit the size of ping-pong balls. Peel off the skin or simply squeeze it open and bite into the custardy pulp. The flesh is sweet, mild and reminds us of pawpaw. Tan, grey and faint orange exfoliating bark. Scarlet-orange-yellow fall foliage. Used up north as an alternative to the iconic southern dogwood tree, *C. florida*. Resistant to dogwood anthracnose and borer. Prefers light well-drained soils with an abundance of air and sun, but it'll tolerate shade and damper areas. Very adaptable. Native to China and Japan. Z4. (1-3')

500A Kousa Dogwood, $16.50



***C. mas* Cornelian Cherry** 20-25' x 15-20' The fruits of this Old World gem, harvested by humans for thousands of years, are delicious bright red pear-shaped "cherries" that set heavily in late summer. Dense, chewy and sweet, they deliver a distinctive toothsome tang—there's nothing like it. Let them ripen to full sweetness before picking. Clusters of small delicate yellow flowers cover the leafless tree in early spring for a striking show before the forsythias even think of waking up. Long-lived large shrub with upright rounded habit makes a great hedge or can be pruned to a small tree. Nutritious, medicinal, high in vitamin C and good in jam, syrup, tarts, fruit leather and wine. The wood is hard and strong, once used for spears and wheel spokes. Prefers well-drained soil and full sun but otherwise adaptable. Likely to bear fruit in 2–3 years. **Partially self-fertile**—plant multiples to improve yields. Native to Europe and Asia. Z4/5. All are **ME Grown.**



***C. m.* 'Elegant'** Bred by Svetlana Klimenko, a Ukranian botanist at the Central Botanic Garden in Kiev. Selected for good fresh-eating flavor. Ripens around the third week of August in Maine. Picking window lasts between two and three weeks. Fruits are about 1 1/4" long with a very slender elongated shape. Soft flesh is tricky to pit so best eaten out of hand. (2-5')

501A Elegant Cornelian Cherry, $29.00

***C. m.* 'Pioneer'** Another Klimenko intro with good flavor. More tart than Elegant but better for processing. Ripens around the first week of September in Maine, about one week after Elegant. Picking window lasts for three or four weeks. Fruits mature to about 1 1/2" long and have a pronounced fat pear shape. Firm flesh is easy to pit. (2-5')

502A Pioneer Cornelian Cherry, $29.00

***C. m.* Cornelian Cherry Seedlings** Each one will be unique. Plant several for genetic diversity. They will pollinate each other and any named cornelian cherry cultivar. (1-3')

503A Cornelian Cherry Seedling, $16.00
503B Cornelian Cherry Seedlings, bundle of 5, $68.00

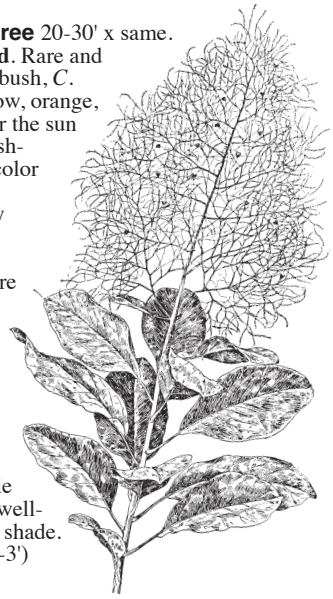
***C. sericea* Redosier Dogwood** 8-10' Formerly called *C. stolonifera*. Bright red stems are a favorite sight from late fall through early spring, before the foliage emerges. Broad loosely rounded multi-stemmed shrub spreads freely by stolons (underground stems) and forms excellent hedges and borders. Most admirable in the winter when the masses of brilliant stems contrast a backdrop of freshly fallen snow. Bring them inside and enjoy them for wreaths, arrangements and basket-weaving. By June, the stems are hidden by dark green foliage and sprinkled with tiny 4-petaled star-shaped flowers. Whitish berries in 2–3" clusters are popular with dozens of bird species. One of the most valuable of our native wildlife plants. Perfect for swamps, streams and wetlands. Very adaptable to a range of soils and climates, but generally likes wet conditions. Sun or partial shade. Fast growing and easy to transplant. To improve stem color, prune out older stems in the spring. These plants were propagated from a swath of wild stems growing in central Maine. Native to eastern U.S. Z2. (1-3')

504A Redosier Dogwood, $14.50
504B Redosier Dogwood, bundle of 5, $59.50

Pollination clarification

Self-pollinating, **self-fertile** and **self-fruitful** all mean the same thing. You can plant a self-fertile tree and expect it to pollinate itself and set fruit alone (for example, peaches, pie cherries, apricots). However, many self-fertile trees' fruit sets are enhanced with multiple plantings (elderberries and *Amelanchiers*). **Self-sterile** or **self-infertile** means that another tree of a different cultivar or variety is needed to set fruit (cross-pollinate). This is the case with most apples. **Monoecious** (from Greek meaning 'one household') plants have their female and male parts on separate flowers both together on the same plant. In most cases, these plants are self-fertile, but not always! (Black walnuts are monoecious but the male flower releases pollen before the female flowers open, so having two plants is better than one). **Dioecious** ('two households') plants have either all male or all female flowers on separate individuals. You would need to plant one female and one male to achieve pollination. When you buy unsexed seedlings, you generally have a 50-50 chance of getting one gender or the other (spicebush and bayberry). **Bisexual** or **perfect** flowers contain both male and female components within the same flower. Some plants with perfect flowers will be self-fertile, some will not. Often, specific cultivars or varieties have perfect flowers but they cannot pollinate themselves and need other varieties to do it for them (apples and blueberries).

Cotinus obovatus **American Smoketree** 20-30' x same. Also called **Smoke Tree** and **Chittamwood**. Rare and exquisite. (Not to be confused with Smokebush, *C. coggygria*.) Large oval leaves emerge yellow, orange, amber, red and purple, are upright and filter the sun like stained glass. They relax and turn bluish-green as they mature, then put on another color show in fall. Bears 6–10" panicles of tiny yellow-green flowers in early June. As they fade, fuzzy light pink "hairs" emerge and persist all summer, giving the tree a hazy smoky misty quality. These plumes are more subtle than the non-native Smokebush, but the foliage is the real eye-catcher here. Finches love the seeds. Scaly interesting bark. Thought to be a relic tree from 25 million years ago, it almost went extinct during the mid-19th century when the wood was over-harvested for fence posts, tool handles and orange fabric dye. Allow it to grow several trunks or prune to a single specimen. Tolerates most soils but prefers well-drained infertile ground. Full sun to partial shade. Native to North America. Z4. **ME Grown.** (1-3')



505A American Smoketree, $18.00

Cydonia oblonga **Quince** 10-25' A small tree with large aromatic tan or yellowish fruit shaped like a cross between a pear and an apple. The aroma is so intoxicating just having a bowl of the ripe fruit in your house will distract you from getting around to cooking them! Oblong furrowed pear-shaped fruit with golden-yellow skin and mild light yellow flesh. Usually eaten in stews and preserves. Makes a fragrant orangey-pink jelly—not like anything we've tasted. Sometimes added to hard cider. At one time, every Maine dooryard had a quince. Cultivated for millennia in faraway lands. Large white to pink flowers. Wood of mature trees becomes impressively gnarled and twisted. We asked co-worker Aktan Askin what he most loves about quince: "I love the sound a big, fully ripe quince makes as it falls off the tree and hits the ground. So solid. So invincible. Thunk! But that aside, I really just love eating fresh quince with a spoon. Carving little balls out and chewing to juice them in my mouth."

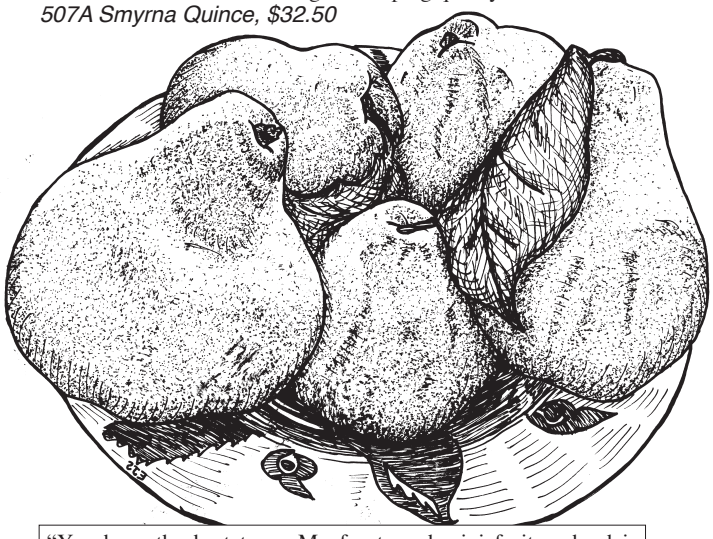
Similar soil requirements to other fruit trees. Plant in full sun and space 15–20' apart. Prune like an apple tree. Needs protection from apple borers (see page 69). Susceptible to fireblight. Ripens in October in central Maine; may not ripen in coldest areas. Not to be confused with Flowering Quince, the ornamental shrub *Chaenomeles*, which has smaller fruit. **Self-fruitful but planting more than one will give better yields.** Native to Asia. Z4/5. (3-6')

C. o. **'Aromatnaya'** A very hardy Russian variety, maybe the hardiest of them all. Selected for its pineapple-like flavor notes and resistance to disease.

506A Aromatnaya Quince, $32.50

C. o. **'Smyrna'** Brought from Smyrna, Turkey, by Californian GC Roeding, whose father Fred brought the famous Smyrna fig to the U.S. Selected for excellent flavor and good keeping quality.

507A Smyrna Quince, $32.50



"You have the best trees. My front yard mini fruit orchard is happily blooming with my neighbors ornamentals. It is nice to grow some food even though I live in town."
–Kathleen Riley, Newington, CT

Diervilla lonicera **Northern Bush Honeysuckle** 2-4' x 2-5' Also called **Dwarf Bush Honeysuckle**. Don't be fooled by the common name: it isn't really a honeysuckle. Every time we've visited the Diervilla in grower Sharon Turner's garden, it's buzzing with bumblebees. Five little bright yellow petals on each tubular flower curl open and away, an invitation to insects, hummingbirds, butterflies and garden tourists. Clusters of flowers form in the axils of new growth. Extended-season bloomer. Long pointed lustrous dark green leaves emerge with a hint of bronze. Good for erosion control or mass planting. We've become fond of the wild specimens popping up around our homesteads. Full sun to light shade. Tolerates even the poorest soils, but if you want it to naturalize, give it rich moist soil. Pest and disease free. Native to eastern North America. Z3. **ME Grown.** (1-3')

510A Northern Bush Honeysuckle, $15.00

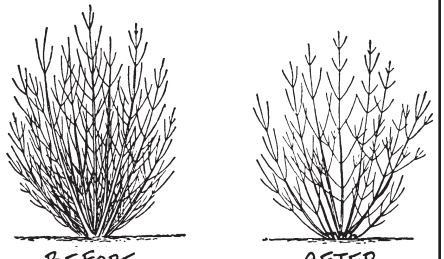
Forsythia* x *ovata **'Northern Gold' Forsythia** 6-8' x 5-7' Bred by Felicitas Svejda, Ottawa, Canada, 1979. One of the earliest forsythia cultivars to flower in spring. Upright form with yellow-grey branches clad in healthy rich green foliage. If your forsythia blooms only from the snow line down, you've been duped: don't buy cheap big-box forsythia. Northern Gold has not only the bud hardiness necessary for flower production above the snow line, but also outstanding golden-yellow flowers. You can have a full bloom every year! Prefers full sun and moderately fertile, slightly acid to neutral soils with good drainage. We cut our first bouquet of the year when we harvest the dormant branches for forcing inside mid-February. Bred from *F. ovata*, a hardy dependably blooming Korean species native to Asia and Europe. Z3. (1-3')

511A Northern Gold Forsythia, $14.50

Pruning Flowering Shrubs

• **Summer-Flowering Shrubs** should be pruned in late winter or early spring, before the new wood begins to grow. These shrubs blossom on the new wood they produce in the spring.

• **Spring-Flowering Shrubs** form flower buds in the summer, after they are finished blooming. Prune them immediately after their bloom is over. If you wait and prune them in the winter or following spring, you will likely remove many flowering buds.



• A common error is to prune or shear shrubs straight across the top. This encourages top-growth and the lower part of the shrub becomes woody and unsightly with less foliage. Proper pruning promotes growth at the base of the shrub.

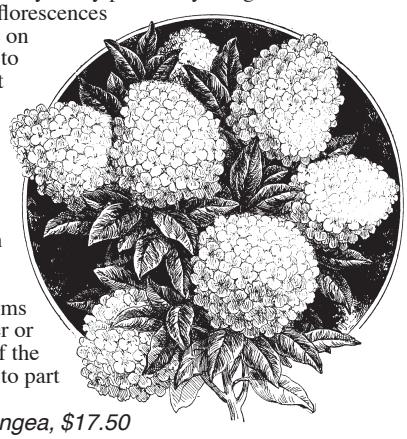
• Observe your plants and see what they need. Some trees and shrubs benefit from aggressive pruning each year and might even respond well to being cut all the way back to the ground; others will respond by delaying fruit or blossom. Some plants thrive with little or no pruning.

• Overgrown shrubs with little foliage near the base may be rejuvenated by cutting canes down to the ground in early March, even though early blooms may be sacrificed that year. They will send forth new shoots in late spring and will be bushy with foliage clear to the ground. Pinch off tops when the desired height is attained. It usually takes two to three years to rejuvenate shrubs and hedges completely.

Hamamelis virginiana **Witch Hazel** 8-20' x same. A small irregular rounded fall-flowering medicinal tree or large shrub. Quirky 2/3" yellow flowers appear in early to mid-November. Oval hazel-like textured foliage turns brilliant golden-yellow in fall. Makes a soothing astringent with a seemingly endless number of uses from controlling acne to soothing diaper rash, baggy eyes (yes!), poison ivy, chicken pox, even an unhappy love life. Thayer's Witch Hazel Astringent is still available in your local drug store. Most preparations involve simply brewing tea from the leaves and/or twigs. "Witch" is said to refer to the odd flowering time or maybe it's because dowsers like to use the interesting forked branches to "witch" for water. Full sun or shade. Prefers moist acid soils; avoid dry spots. No pests or diseases, does well with very little care. We do nothing to ours and it looks better and better every year. Native Canada to Georgia. Z3. **ME Grown.** (1-3')

513A Witch Hazel, $16.50

Hydrangea paniculata **'White Diamonds' Hydrangea** 4-6' x 5-6' Open-pollinated seedling of 'Pink Diamond.' Bred by Michael Dirr, U of GA, 2009. A somewhat compact very hardy panicle hydrangea with large 4–6" white loosely conical inflorescences July through October. Flowers take on a pink blush as temperatures begin to cool. Upright sturdy branches don't flop over by the weight of sizeable flowers. Dark green thick leathery foliage tolerates heat and drought better than other hydrangeas and stays healthy-looking until fall. An unpretentious hydrangea as much at home in the natural garden as the formal one. Flowers attract butterflies and are sought after for fresh and dried arrangements. Blooms on old and new wood. In late winter or early spring, prune back 30–50% of the previous season's growth. Full sun to part shade. **PPA.** Z3. (1-3')



514A White Diamonds Hydrangea, $17.50

Hitchhikers in a Changing Climate

Fedco friend Alex Koch has been paying attention to trees. Really close attention. Alex took thousands of measurements of trees, miles of notes, and spent countless hours logging the data. His work shows how some of Maine's native tree species are responding to our quickly changing climate. He identified three potential fates for our leafy friends: persist and migrate, adapt in place, or perish.

We think of animals and people migrating—things with legs—but we don't often consider that plants migrate, too. The climate has always been changing, and over thousands of years trees naturally migrate toward climate-suitable habitats. But with the current rate of climate change, that scale is in decades, faster than the trees' ability to keep up. Not only do they have to contend with warming temps, they also have the obstacles of urban hardscapes and sterilized suburbs. It's an impossible journey.

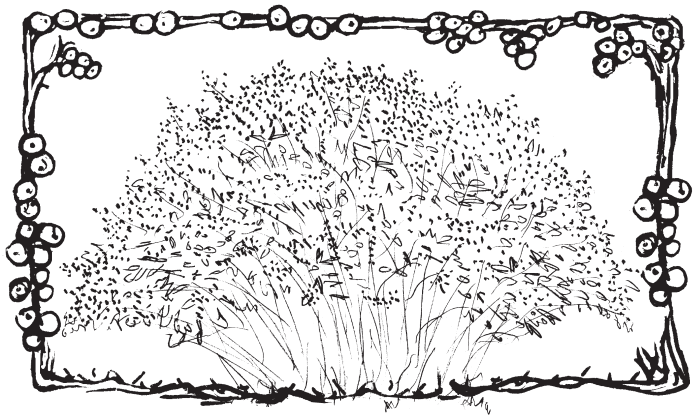
Predictive modeling shows that central Maine will soon (in 100 years or so) have a climate-suitable habitat for trees like loblolly pine, Virginia pine, yellow poplar and eastern red cedar. By studying test plots in central Maine for a few years, Alex found that Southern Maine species like chestnut oak and black oak will likely do well in central Maine soon, while other species like white spruce and eastern white pine will need to migrate even farther north. Our eastern white pine is already showing signs of decline with the warming trends and may eventually disappear. We're likely to see pockets and microclimates of these populations, but in general, if they are to maintain healthy stands, they will need to pack it up and move north.

Models suggest big changes coming soon. Hard-mast and wind-pollinated species, which move slowly, will especially need our help if they are to survive. Once upon a time, Osage orange seeds could travel long distances by way of the mastodon's gut. Nowadays, we have squirrels and deer stashing seeds, but they don't tend to cover as much ground. It's possible that we are now the megafauna the seeds need to transport them to climate-appropriate regions in a timely manner. Fir, northern red oak, red maple—seeds we can carry in our pockets.

We need more research before delving into mass plantings of species in new regions, but in the meantime we can participate on a small scale. Trial warmer-loving natives in a slightly colder spot. Try a Zone 5 plant in Zone 4 or 3. Give a native plant a lift up the road when you place your next nursery order. Start a plant collection and dabble. Let us know what you observe!

Check out nrs.fs.fed.us/atlas/tree/# to observe current and predicted ranges of eastern U.S. tree species.

Between 2018 and 2020 Alexander Koch folded his research and observations into a thesis, "Potential for Assisted Colonization: An Analysis of Tree Seedling Growth and Mortality at Two Sites in Maine."



Ilex verticillata **Winterberry** Also called **Black Alder**, **Fever Bush**, **Possumhaw**, **Swamp Holly** and more. Deciduous suckering medicinal holly with clusters of upright stems. Best known for profusions of bright red 3/8" berries that stand out after the leaves fall—they keep their color all winter, spectacular against the snow. A staple of the Maine landscape, providing late-spring forage for birds. Lustrous deep green leaves retain their color long after they're cut for decoration. Richly foliated, but open enough to display interesting branch structure. Leaves used for tea and tonic, astringent bark used in herbal medicine. Tolerates dry conditions but prefers moist or wet acidic soil, even standing water. Sun or partial shade. No serious pests. **Male and female plants required for fruit**, which is produced on female plants. Plant males within 30' of females. Native from midwestern to eastern U.S. Z4. (1-3')

I. v. **'Afterglow'** 3-6' x 3-5' **Female.** Early bloomer with large orange-red fruit. Compact form with small glossy green leaves. Jim Dandy male is a suitable mate.

515A Afterglow Winterberry, $16.50

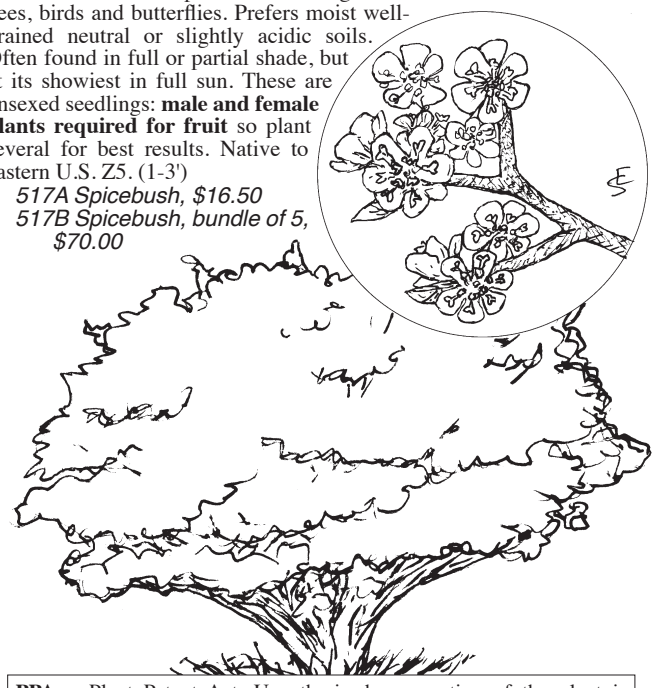
I. v. **'Jim Dandy'** 3-6' x 4-5' **Male** selection to pollinate Afterglow. Will also pollinate Red Sprite female, which we've offered other years. One will pollinate several females. Small white flowers line branches in mid-July.

516A Jim Dandy Winterberry, $15.50

Lindera benzoin **Spicebush** 6-12' x 8-12' Large rounded multi-stemmed native shrub suited to naturalizing in moist or wet areas, singly or in groups. Soft-yellow flowers early in spring followed by small clusters of glossy red berries by mid to late summer. Blue-green foliage turns golden yellow in fall. Edible berries and medicinal twigs and bark. Scratch the berries, foliage or stems and you'll know how it got its name: all three have a delicious lemony spicy scent and can be used as a native alternative to allspice. Leaves, twigs and fruit used in teas. Attracts bees, birds and butterflies. Prefers moist well-drained neutral or slightly acidic soils. Often found in full or partial shade, but at its showiest in full sun. These are unsexed seedlings: **male and female plants required for fruit** so plant several for best results. Native to eastern U.S. Z5. (1-3')

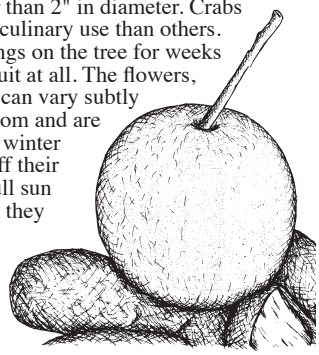
517A Spicebush, $16.50

517B Spicebush, bundle of 5, $70.00



PPA = Plant Patent Act. Unauthorized propagation of the plant is prohibited. The use of **PPA** in the catalog is for informational purposes only and does not constitute an endorsement by Fedco of plant patenting.

Flowering and Culinary Crabapples *Malus* spp.



A crabapple is any apple with fruit smaller than 2" in diameter. Crabs bear edible fruit, some more favorable for culinary use than others. Some have persistent wildlife fruit that hangs on the tree for weeks or even months. Others have hardly any fruit at all. The flowers, tree form and even the shape of the leaves can vary subtly or profoundly. Most are magnificent in bloom and are often ornamental year round, especially in winter when the leaves drop and the trees show off their interesting forms. Although crabs prefer full sun and deep well-drained soils of 5.5–6.5 pH, they are quite forgiving and will thrive in many locations with a little TLC.

Similar cultural requirements as culinary apples (see pages 69-70).

Crabapples require less formal pruning than apples. Prune broken branches and suckers, and encourage the tree to assume its unique form. Crabapples are grafted on M111 rootstock (see page 5). **Crabapple trees need a second variety for pollination,** but any apple or crabapple blooming around the same time, within 1/4 mile, will probably do. (2 1/2-5')

Amaszam (American Masterpiece) 25'x18-20' Seedling of Madonna. Jim Zampini intro, Lake County Nursery, Perry, OH, 1994. Bushels of single magenta-red flowers sprawl across the limbs in spring. One of the best reds among crab cultivars. Maroon-purple-green leaves give this tree full summer interest in the landscape after the flowers have faded. Come fall, the 3/8" orange fruits allure the eye and feed the birds. Somewhat pyramidal in shape. Originally selected for its not-sprawling branches, it's taller than it is wide and fits into smaller landscapes. Introduced by the respected nurseryman Jim Zampini (1932-2017) who loved plants and people alike and specialized in bringing them together. Z4. **ME Grown.**

524C Amaszam Crabapple on M111, $29.75

Brandywine 20x20' *M. ioensis* 'Plena' Klehm's No. 8 (*M.* x *purpurea* Lemoinei x M. Klehm's Improved) Incredibly beautiful fragrant flowers followed by unbelievably bitter fruit. Deep red buds open to small deep pink double rose-like blossoms. Put an arrangement of these flowers in a vase, and people will swear they are roses. One of the most fragrant crabs. Some growers will hate the unattractive 1–2" yellow fruit that drops in the fall and makes a mess. Cidermakers will love it. Very high in tannin. In *Cider Digest* some years ago, one grower wrote, "You ought to try planting a crab called 'Brandywine'. WOW!!! what a real mouth-killer as far as tannin goes… Couldn't tell you the acidity because my tongue had gone dead." Loosely rounded tree. Alternate bloomer. Blooms late. Z4. **ME Grown.**

525C Brandywine Crabapple on M111, $29.75

Dolgo 25x30' From seed collected by NE Hansen of *M.* x *robusta* in 1897 at the Imperial Botanical Gardens, St. Petersburg, Russia. (*Dolgo* means 'long' in Russian.) Introduced in the U.S. in 1917. The classic culinary crab still found in old Maine dooryards. Apricot-pink buds, large fragrant 2" pure white single flowers bloom early. Beautiful purple-red 1 1/2" teardrop-shaped fruit makes flavorful clear ruby-red jelly. In recent years the aromatic sweet very acidic fruit has found favor with cidermakers. Great for canning, pickling and delicious sauce. Vigorous large blocky upright spreading tree consistently yields abundant summer crops. Very hardy. Z2. **ME Grown.**

527C Dolgo Crabapple on M111, $29.75

Firebird 8x10' Open-pollinated seedlings of Sargent. Michael Yanny intro, Johnson's Nursery, Menomonee Falls, WI, 1980. Offspring of one of our best crabs ever—the one and only Sargent, which is more horizontal than tall—this young'un is slightly more upright than its parent but more compact in form topping out at 8' and not much wider than 10'. Perfect for smaller spaces or for the front side of a tall border. Pleasingly delicate pink-to-red buds give way to a cloud of single white blossoms in spring and pea-sized red fruits in fall that stay firm through March. A delightful additional to any home garden. Disease resistant. Z4. **ME Grown.**

528C Firebird Crabapple on M111, $29.75

Hozam (Holiday Gold) 15x12' Another Zampini selection from Lake County Nursery, Perry, OH. This one is a hybrid of unknown parentage. Yellow-maturing-to-golden fruits sometimes blushed pink dangle like ornaments, persist through winter and give this tree its off-season charm. Everyone needs at least one gold-fruiting crab in their collection. This is one of the best! Abundant fragrant single white flowers decorate between the green leaves. Open rounded form. May catch the bird's eye as easily as it catches yours. Z4. **ME Grown.**

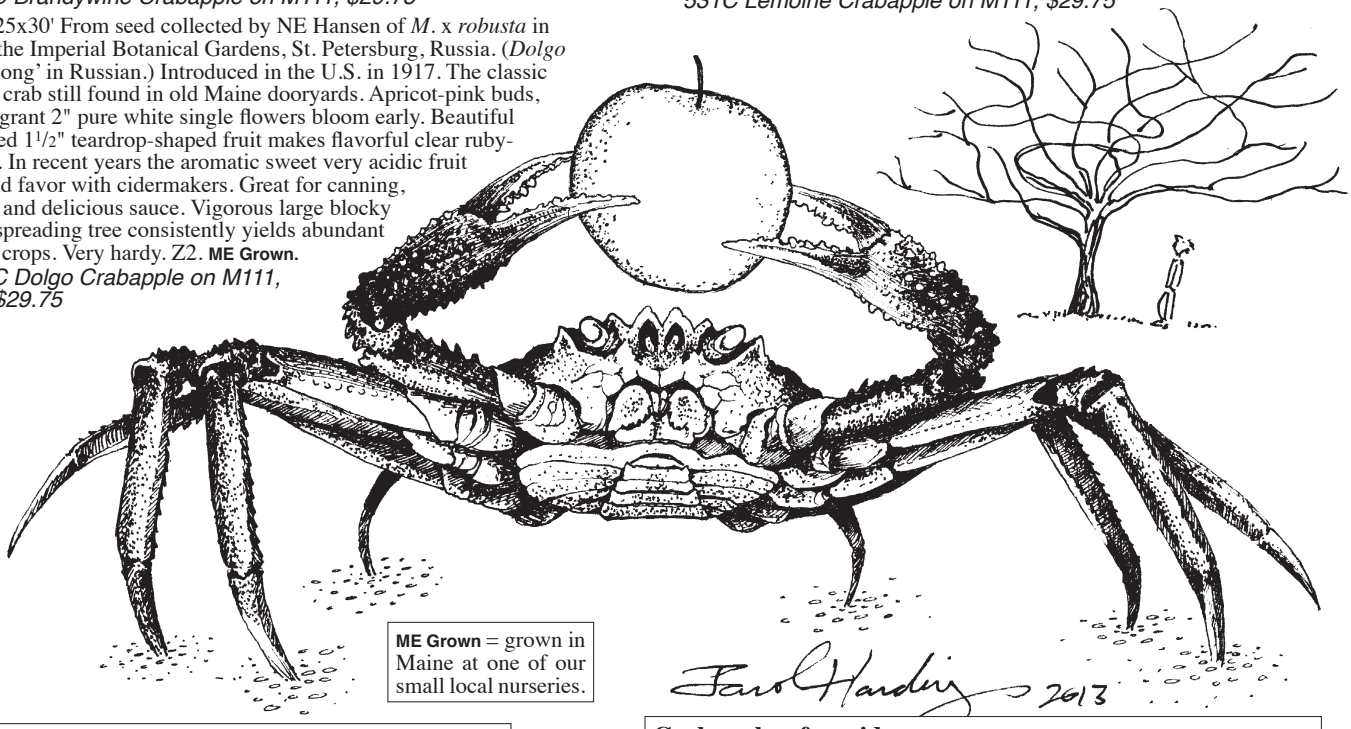
529C Hozam Crabapple on M111, $29.75

Jay Darling 20' x same. *M. altropurpurea*, maybe *M. pumila* Niedzwetzkyana x *M. baccata*. First seen in Croux & Fils catalog, Chantenay, France, around 1904, but parentage uncertain. Large single purple-red flowers, crimson-tinged foliage and 1" purple fruit that is red through. One of a series of crabs released under the name of the Rosybloom crabapples all of which were progeny of Niedzwetzkyana. If you're a crab collector, you've heard of Arie den Boer from Des Moines, IA, known for having one of the largest crab collections in the U.S. He named this tree in 1943 after a two-time Pultizer-Prize–winning political illustrator and wildlife conservationist. Cultivar might be the same as Eleyi. Regardless of its mysterious provenance, this tree is thriving in the present moment in grower Delton Curtis's backyard. Z4. **ME Grown.**

530C Jay Darling Crabapple on M111, $29.75

Lemoine (Lemoinei) 18x18' (*M. pumila* Niedzwetzkyana) x (*M.* x *atrosanguinea*) Victor Lemoine et Fils, Nancy, France, 1922. Once the most popular red-flowering crab though no longer found in many catalogs. Deep red buds open to single or semi-double red-purple flowers. Fiala calls it a "magnificent tree." It's the first crab you'd see walking down past Roger Luce's barn into the gardens. Fairly large with a beautiful wide broad rounded shape. The branches curve and loop back, giving it a windswept look. Bronze-purple foliage reminds us of Amelanchier in spring and still looks good in the fall. Modest display of 1/2" ruddy red fruit with tiny white dots. Excellent disease resistance. A parent of many fine crabs, including Brandywine and Liset. Blooms midseason. Z3. **ME Grown.**

531C Lemoine Crabapple on M111, $29.75



ME Grown = grown in Maine at one of our small local nurseries.

"Thank you for the conscientious attention you are giving to the lives of both plants and humans during the pandemic."
–Curtis Russet, Steuben, ME

Crabapples for cider Some ornamental crabs, like **Dolgo** and **Brandywine**, are great additions to hard cider. And some varieties we've listed with cider apples on pages 16-17 are crabapples and have special ornamental value, like **Hewe's Virginia Crab**.

Orange Crush 15x15' *M.* Liset x *M.* Red Swan. Father John Fiala hybrid, Klehm Nursery intro, S. Barrington, IL, 1990. A profuse exquisite display of single large deep crimson-pink blossoms that fade to lighter purple-pink. Rosy buds. Attractive oblong 1/2" maroon fruits persist. Spreading habit. Not really much orange to speak of but bright and lively. Fiala raved about the orange tint, but plants express themselves differently on different sites. Any crab fancier will recognize the expression of Liset, one of its parents and one of our favorite reds. Fiala recommended planting a white crab and a blue spruce as companions to highlight the loveliness of this cultivar. Z4/5. **ME Grown.**

532C Orange Crush Crabapple on M111, $29.75

Polar Bear 20x20' Henry Ross intro, Gardenview Horticultural Park, Strongsville, OH. Very large "polar bear"–sized double white flowers look like little white roses before they fully open. Medium-sized tree with upright rounded form. After first reading about Henry Ross in John Fiala's classic crabapple text, we wrote to Mr. Ross to ask him about offering some of his selections. Since then we have had the privilege of listing several, including this Fedco exclusive. Seems to be rare in the trade as we haven't found it anywhere else. Persistent fruit. Z3/4. **ME Grown.**

533C Polar Bear Crabapple on M111, $29.75

Crabapple Collection
An assortment of 5 crabapples. Most will be from this year's catalog but a few rare surprises may be included. All on M111 rootstock. Trees are individually labeled within each bundle. Z4. All are **ME Grown.**

545C Crabapple Collection, bundle of 5, $133.50

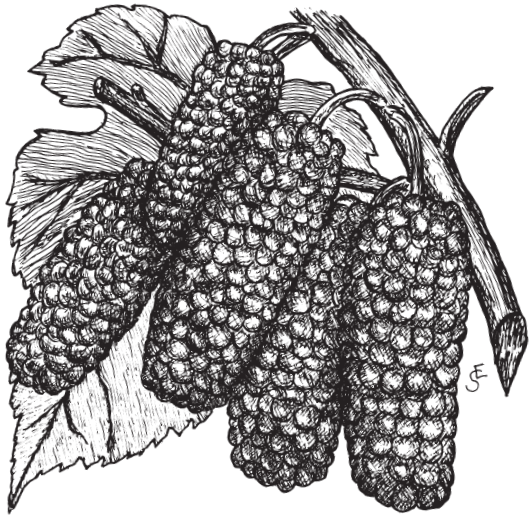
Mespilus germanica **'Breda Giant' Medlar** 12-20' x same. Introduced in the Netherlands. Cinnamon-flavored spicy pear-like fruit shaped like a large rose hip, just under 2" in diameter. Good eating when ripe, thin-skinned with applesauce-like texture. Fruit cultivated in Europe and England since the Middle Ages or earlier, and still considered a culinary delight. One source recommends roasting in butter with citrus slices. Also makes good jelly, paste, chutney and "cheese." Fruit is hard when harvested after the first hard frost and must be bletted—allowed to ripen for several weeks in a cool place. Tastes best just before it turns mushy. 1–2" white flowers blushed with pink bloom May to June. Shiny green waxy leaves, a nice addition to the fruiting landscape. Begins bearing fruit 2–3 years after planting. One tree could bear 20 lbs of fruit once established. Plant in well-drained fertile soil, full sun. Native to southeast Europe and Iran. **Self-fertile.** Z4/5. **ME Grown.** (2-5')

546A Breda Giant Medlar, $29.75

Make Space for Native Plants

We love incorporating native plants back into the landscape. These plants are attractive, natural and beautifully suited to our growing conditions. They are also the best food sources for our butterflies, bees and other wildlife. Here are some you'll find in our catalog:

Amelanchier	Echinacea	Ninebark
Arnica	Elderberry	Northern Wild Raisin
New England Aster	American Elm	Oak
Bayberry	Ferns	White Pine
Birch	Balsam Fir	Beach Plum
Blackberry	Geranium	Redbud
Black Cohosh	Hazelnut	American Smoketree
Black Haw	Hickory	Spicebush
Boneset	Hophornbeam	Spruce
Bunchberry	Blue Flag Iris	Steeplebush
Carolina Allspice	Jack-in-the-Pulpit	Sycamore
American Chestnut	Linden	Turtlehead
Chokeberry	Lingonberry	Black Walnut
American Cranberry	Lobelia	Wild Senna
Culver's Root	Sugar Maple	Winterberry
Diervilla	Milkweed	Wintergreen
Pagoda Dogwood	Mockorange	Witch Hazel
Redosier Dogwood	Mulberry	Yarrow
Silky Dogwood	Nannyberry	



Morus alba **x** ***M. rubra*** **'Illinois Everbearing' Mulberry** 30x20' White County, IL, 1947. Sweet flavorful purple-black 1" blackberry-like fruit is delicious fresh, in sauces, pies, fruit leather or smoothies. What fruit you don't pick, the birds will. Great tree for viewing a huge variety of birds up close. Plant it next to the chicken pen where it will rain chicken feed into the yard for several weeks, or put down a sheet to collect the fruit as it falls. Dense round-topped tree is one of the last to leaf out in the spring and one of the first to set fruit. Ripens in early to mid-July and continues for several weeks into late summer. Fast growing, even in poor soils. Prefers moist well-drained soils but otherwise adaptable. Full sun to partial shade; withstands pollution, drought, wind and salt. **Self-fruitful** grafted cultivar, so only one plant required for fruit. Z4/5. (1-year grafts)

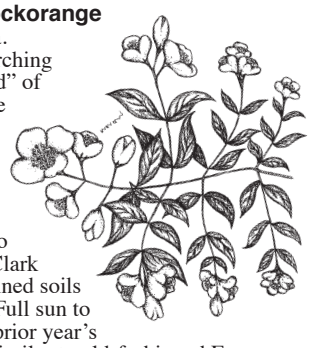
547A Illinois Everbearing Mulberry, $32.50

Myrica pensylvanica **Bayberry** 5-10' x same. A common sight along Maine's rocky shores. Glossy leaves are highly aromatic, although not to be confused with the Mediterranean bay leaf in your spice collection. Small greyish-blue waxy fragrant berries were historically used for making candles. Non-showy flowers appear in late spring followed by fruit production along the stems of female plants during summer into late fall. Plants feed numerous wildlife species and are especially craved by swallows. Rounded deciduous semi-evergreen very salt-tolerant shrub thrives in full sun to partial shade, sandy poor soils to heavy clay soils. Excellent en masse or in hedges, tends to sucker. Fixes nitrogen. Tends toward being dioecious: male and female plants required for good fruit development. Unsexed plants; **plant several if you desire berries**. Native to eastern U.S. Z2. **ME Grown.** (1-3')

549A Bayberry, $15.00

549B Bayberry, bundle of 5, $67.00

Philadelphus lewisii **'Blizzard' Mockorange**
4-5' x 3-4' COPF intro, Alberta, Canada. Medium-sized coarse upright loosely arching ornamental blooming shrub. A "blizzard" of sweet citrusy fragrance from pure-white slightly cupped 4-petaled blossoms for up to four weeks in late spring, after the lilacs fade. A spray of golden yellow anthers attractive to bees and butterflies accents each flower. Species was named after Meriwether Lewis who noted it in 1806 during the Lewis and Clark Expedition. Prefers moist rich well-drained soils but will grow well in most conditions. Full sun to partial shade. Since blossoms form on prior year's growth, best to prune after flowering. Similar to old-fashioned European *P. coronarius*, but this one is native to North America. William Cullina calls it "our most ornamental *Philadelphus* species." Z3. (1-3')

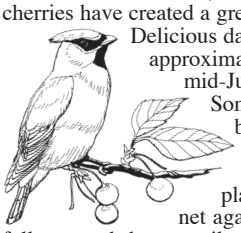


550A Blizzard Mockorange, $14.50

Physocarpus opulifolius **'Center Glow' Ninebark** 8-10' x same. Diabolo x Dart's Gold. Bred by Dr. Harold Pellet at the Landscape Development Center, MN, 2006. An eye-catching pollinator plant with multicolored foliage. Leaves emerge yellow-green with maroon edges and turn entirely burgundy as they mature. In May and June ninebark will be buzzing while native bees and other pollinators frenzy around the 1–2" rounded pinkish-white flowers. Adds texture and color to gardens and shrub borders. Beautiful shredding bark in winter. Upright rounded habit. Plants can be pruned nearly to the ground to restore shape and size. Full sun to part shade. Native to eastern U.S. Z3. (1-3')

552A Center Glow Ninebark, $16.00

***Prunus* x *kerrasis* 'Carmine Jewel' Dwarf Sour Cherry** 6-7' x same. USask intro, 1999. Crosses between sour and Mongolian cherries have created a great deal of excitement in fruit-growing circles.



Delicious dark red fruit with juicy flesh and small pits are approximately the size of small sour cherries and ripen in mid-July. Good for both fresh eating and processing. Some growers have reported getting 20–30 lbs per bush after 3–5 years. In our trials we saw fruit after 3 years and have found Carmine Jewel to be well-suited for our climate. Compact plant size keeps the fruit accessible and easier to net against birds than a standard cherry tree. Prefers full sun and decent soil with a pH of about 6.5. Pamper with mineral amendments and compost. **Self-pollinating.** Susceptible to brown rot. Z3. **ME Grown.** (1-3')

553A Carmine Jewel Dwarf Sour Cherry, $20.00

***P. maritima* Beach Plum** 6' x 5-6' Rounded dense suckering shrub found along ocean beaches, New Brunswick to the Carolinas. In spring beautiful showy white blooms cover the dark branches. Purplish-red 1/2–1" fruit in late summer. Excellent jams, sauces and especially jelly. Although typically found growing naturally in poor sandy soils, the plants thrive in well-drained fertile soils with a pH of 6–6.5. Additional fertilization will increase productivity. We suggest an annual 5-gallon bucket or two of compost per plant. Prune to maintain an open center for good light penetration. Plant about 5' apart. Pollination requirements are uncertain—**we recommend planting at least two for good fruiting**. Salt tolerant! Native to eastern U.S. Z3. **ME Grown.** (1-3')

554A Beach Plum, $15.00
554B Beach Plum, bundle of 5, $65.00

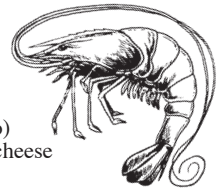
***P. tomentosa* Nanking Cherry** 6-10' x same. Broad dense fruiting shrub, becoming open and attractively irregular. One of the earliest flowering fruits every spring. Pink buds open to masses of fragrant white 3/4" flowers. Deeply veined light green foliage with very fine fuzz (tomentum) lining each vein underneath. Excellent hedge plant: an edible landscape crop that produces a lot of fruit that actually is edible! Variable 3/4" fruit in early summer ranges in flavor from mild to tart and in color from scarlet to clear red to pink and sometimes even white. Eat fresh or frozen. Excellent jelly and fruit leather. Said to make a good pie but pitting would require quite a bit of work. Covering plants with netting will deter birds from robbing your crop. Prefers full sun in well-drained soil. **Plant two or more for pollination.** Susceptible to brown rot. Native to China and Japan. Z2. (1-3')

555A Nanking Cherry, $14.50

Strawberry-Rose-Fennel Shrimp Roll-ups

Recipe from Khris Hogg, owner of Perennial Cider Bar in Belfast, ME.

This interesting dish you eat with your hands uses just a few simple ingredients:



1 cup fresh rose petals, or 1/2 cup dried
Apple cider vinegar
1 head fennel, with fronds
2 quarts fresh strawberries
1/2 lb raw baby shrimp (scallops work, too)
1 cup mayo, strained yogurt, or farmer's cheese
1 head lettuce

A day or two before: Place rose petals in a pint jar and fill with cider vinegar. Let sit at least overnight. You can make this further in advance—it's an excellent pantry item on its own.

To make the fruit leather: Cut off fennel fronds and set them aside. Slice the bulb lengthwise, toss with oil and salt, and roast face down at 350° until browned and soft, about 35 minutes. Chop and purée, removing any tough outer pieces. Purée berries until smooth, then mix with fennel purée and 1 cup of finely chopped fronds.

Spread mixture about 1/8" thick on a sheet pan lined with wax paper, and place in a dehydrator, solar cooker, or very low oven (140°) for about 10–12 hours. (We smoke the purée with a smoke gun before dehydrating. This optional step develops a deeper flavor from the fruit. Without a smoke gun, you could put the purée in a stainless-steel bowl and set it to the side of your charcoal grill for 5–10 minutes. Or try grilling the whole fruit before puréeing.) When the leather is done, peel it off the wax paper and set aside.

An hour or two before serving: Prepare a brine—for 1 c. rose-petal vinegar, add 2 Tbsp water and a pinch of salt. Add the baby shrimp to the brine. Cover and refrigerate.

Assemble the roll-ups: Cut fruit leather into 4" squares (or whatever size/shape you want). Spread 1 tsp mayo on the leather. Stack 2 lettuce leaves torn to fit. Spread ½ tsp mayo on the top lettuce leaf. Finish with 1 Tbsp cured shrimp, roll it up, and repeat. Arrange on a plate and enjoy!

***Rosa* spp.**

For millennia, roses have beguiled humans. The first cultivation of these flowers dates back more than 5000 years in China. Fossil records suggest that roses may have been around for more than 30 million years. Regarded as the ultimate icon of love, grace, beauty and elegance, roses continue to be the subject of art and poetry across the world.

Roses have long been used in medicine, food, tea and perfumery. In the first century, Pliny the Elder recorded more than 30 uses of rose medicine. Leaves, petals, hips and roots all have medicinal properties. Rose hips are rich in vitamin C and make a wonderful "rose apple" jam; rose-petal elixir calms the nerves and lifts the spirit.

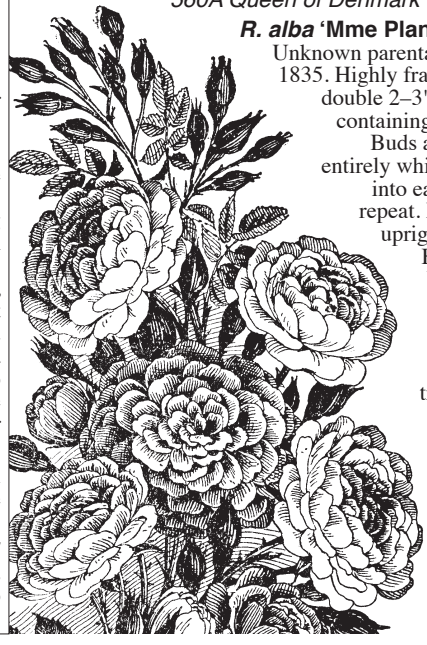
Each year, we aim to offer a diverse selection of unusual and antique varieties. Unlike hybrid tea roses, these roses are all vigorous, cold hardy and on their own roots rather than grafted. The antique varieties grow slowly compared to newer hybrids and tend to be more difficult to propagate. You may notice when you receive your order that some of these roses have small root systems and little top growth. Don't be alarmed by this—it's just the nature of these old varieties. We can attest that they perform just as well as the others. Native to temperate regions throughout the world. (9-18")

***R.* Chinook Sunrise** 4-6' x same. Complex hybrid. Vineland Res Stn, Ontario, 2019. Another exciting breakthrough in the world of hardy apricot roses. We're excited to offer this exquisite multicolored rose introduced just last year through Canada's 49th Parallel Series. Apricot buds open to semi-double 2–3" bright coral-pink blossoms that lighten to create a kaleidoscope of shades from June until frost. Glossy deep green leaves are black-spot resistant. Low-maintenance non-suckering shrub rose. If you only have space for one rose, this might be the one. *Limited supply.* Z3. **Indigenous Royalties.**

559A Chinook Sunrise Rose, $18.50

***R.* Queen of Denmark** 4-5' x same. Unknown origin and parentage, likely *R. alba* x Damask hybrid, 1826. Also called **Konigin von Danemark**. One of the oldest and most beautiful of the antique shrub roses. Highly fragrant medium-pink very double quartered blossoms appear to be overflowing with petals. Cupped 2–3" blossoms are similar to some of the *gallicas* we offer and darker pink than most *albas*. Coarse grey foliage. While most *albas* aren't too thorny, propagator Bob Osborne recommends putting on the gloves for this one. Smaller than most shrub roses. Z3.

560A Queen of Denmark Rose, $18.50



***R. alba* 'Mme Plantier'** 5-6' x same. *R. alba* hybrid. Unknown parentage, likely *R. alba* x *R. moschata*, 1835. Highly fragrant *alba* with clusters of highly double 2–3" pale white blossoms, sometimes containing more than 200 petals per flower. Buds are blushed with pink and open to entirely white. Blooms profusely end of June into early July in central Maine with no repeat. Medium-green smooth foliage on upright arching stems with few thorns. Benefits from support or trellising but we prune ours back each year and keep it freestanding. Grows vigorously upright then billows out with age. In warmer climates it can grow 20' into a nearby tree, though more often seen as an arching shrub rose in the north. We've been growing it for a few years now and anticipate June when we can sink our noses deep into the aromatherapy of these soft petals. Z4.

561A Mme Plantier Rose, $18.50

***R. cinnamomea* 'Plena' Cinnamon Rose** 4-6' x same. Ruffled 2" pink blossoms with a mildly spicy sweet fragrance. Rare and mysterious species rose, most likely brought to North America by early settlers from France. Commonly found near old abandoned farmsteads throughout Maine and New Brunswick. We are offering the more commonly seen Plena, which has a double flower, unlike the straight species which is single. Among the first wild roses to flower in Maine, seen late May and early June on some of the old back roads. Vigorously suckering, low growing and very thorny. We look forward to this lovely rose each year. Plant it where it has plenty of space to sucker and spread and do its thing without pricking you. Highly adaptable. Z4.

562A Plena Cinnamon Rose, $18.50

***R. gallica* 'Cardinal de Richelieu'** 2-3' x 3-4' Laffay, France, 1840. Highly fragrant dark purple-burgundy double 3" blooms in midsummer. Densely petaled flowers hold their fragrance and can be dried whole. Smooth green foliage. Bushy and smooth stemmed. Not thornless, but less thorny than thorned roses. Another one of our favorites. Susan likes to say that Cardinal de Richelieu invented mayonnaise. Rugged and easy to grow. Blooms on old canes so minimum pruning and maintenance required. Soil adaptable. Sun or partial shade. Z3/4.

565A Cardinal de Richelieu Rose, $18.50

***R. g.* 'Tuscany'** 3-4' x same. Cultivation of the **Old Velvet Rose**, as it is also called, has been occurring since the 14th c. making it one of the oldest of all the *gallicas*. Fragrant deep crimson, almost purple, 2–3" double flowers with prominent golden-yellow stamens. Foliage is greenish-grey and rough in texture. Displays its strikingly dark aromatic flowers once each summer. Plant it nearby where it can be closely admired. Adaptable and needs little maintenance. Z4.

566A Tuscany Rose, $18.50

***R. pimpinellifolia* 'Harison's Yellow'** 6' (*R. pimpinellifolia* x *R. foetida persiana*) 1830. Yellow roses up north are rare. Harison's is a classic deep yellow. Creates a brilliant spectacle every June. Licorice-scented 2" double flowers trail down long arching canes of delicate greyish-green foliage. Large thorns. Bred by an amateur propagator named Harison who crossed Scotch Briar and Persian Yellow. Z4.

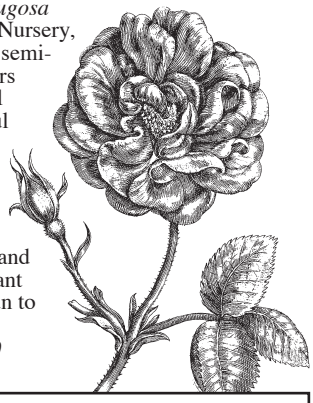
567A Harison's Yellow Rose, $18.50

R. rugosa 4-6' x same. Also called **Japanese Rose** or **Beach Rose**. Vigorous spreading shrub with dark green wrinkled (rugose) leaves. Flowers range from deep pink to light pink. Large edible red hips up to 1" are good for jams, teas and fresh eating right off the bush. Deb Soule of Avena Botanicals uses *rugosa* petals in her much-loved Rose Petal Elixir. Considered by herbalists of Western, Chinese and Ayurvedic traditions to be rejuvenating and cooling. Blooms form on both old and new wood, so pruning necessary only to control size. Prefers full sun and well-drained sandy soil but also flourishes in fertile garden beds. Tolerates salt, pollution and drought; practically care-free. Native to China and Japan. Z2.

568A Rosa Rugosa, bundle of 5, $16.00

***R. r.* 'Dart's Dash'** 4-5' x same. *R. rugosa* hybrid, parentage unknown. Darthuis Nursery, Netherlands, date unknown. Stunning semi-double very large 3–4" magenta flowers with a sweet lemony scent. Blooms all summer and into fall making a colorful hedge or border. Somewhat similar to Hansa but more compact with an extended bloom time. Terrific fall display of beautiful large orange-red hips that soften after a few light frosts. Petals and hips are both edible and medicinal. Bright green disease-resistant foliage turns orange in the fall. Full sun to part shade. Z2.

569A Dart's Dash Rose, $18.50



Growing Roses

Roses prefer full sun (at least 4–6 hrs per day) and a pH of 6.0–7.0. Space 4–6' apart. They will do well in most well-drained soils with a good amount of organic matter. In locations with poor drainage, add gravel at the bottom of the planting hole, or build in drainage. Pick a site with good air flow, but avoid sites with cold northwest winds. Avoid competition with tree roots.

Plant roses as early as soil can be worked. Most roses' roots don't spread beyond the original hole, so dig a bushel-sized hole, as deep as 2' or more. We recommend lots of rotten hay in the bottom of the planting hole. Mix soil with liberal quantities of well-rotted manure and compost. Add a coffee-can of rock phosphate or bone meal.

Soak roots in water overnight or up to 24 hours before planting. Prior to planting, prune roses back to 3 canes, 2–5" tall. Plant them 1" below the level they were in the nursery. Add water as you fill in the hole to puddle it in. Mound soil around branches to prevent them from drying out, and to encourage buds to sprout. As the buds open, pull back the soil to the correct level.

Shrub roses and climbers will require little pruning in later years. Any pruning should wait until after the forsythia bloom. Remove dead or broken branches, and periodically cut out the oldest wood. Keep roses well mulched to retain moisture and reduce weeds. Add 2 shovelfuls of composted manure to each crown in late fall.

Old-fashioned Roses

Roses grown in Europe before 1800 are referred to as "Old World" roses, including the cultivars of *Rosa gallica* and *R. alba*. Their pink colors ranged from the deepest dark purple of 'Cardinal de Richelieu' to a faint pink blush like that of 'Chloris'. There were no reds among these antique roses and, though rich in fragrance, they bloomed only once per season. In the late 1700s red roses with repeat blooming tendencies were introduced from China, shifting the focus of rose breeding toward those traits. Demand for the aromatic and medicinal qualities of the Old World roses declined, supplanted by flowers that lasted long through the season. The hybrids created since the 1820s are called "modern" roses and are much more commonly seen in gardens today.

R. gallica is considered the oldest rose, steeped in history, legend and myth, and still grows wild in some places in the Caucasus, the mountainous region between the Black and Caspian seas, where it originated. Its exact origin is unknown but it can be traced back fourteen centuries when it was considered a symbol of love by the Persians. The aromatic petals hold their scent better than any other rose and have long been considered medicinal. This species contains hundreds of different cultivars, some very similar and others unique. Most have similar compact shrub habits and are generally very hardy. Most modern-day roses are presumed to be descendants of the *gallicas*.

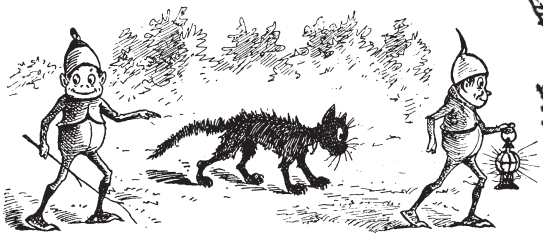
The *albas* are almost as old as the *gallicas* and are also believed to have traveled west from the Caucasus with the Greeks and Romans. Many of the *alba* cultivars were bred in the 1800s in Europe. Though they flower only once, they should not be overlooked, as their beauty and fragrance are unparalleled by any modern rose. They are considered "tree roses" with tall canes that can be trained to fences, pillars and stonewalls, like climbers. Unlike many roses, *albas* bloom on old wood—if pruned too heavily, they can take years to flower again. Like heirloom apples, they are actually more disease resistant than many of the modern hybrids.

Willow *Salix* spp.

The genus *Salix* comprises hundreds of different species of plants most commonly called willows but sometimes called **Osier** or **Sallow**. Willows grow all over the world. Some, like the weeping willow, are towering specimens. Others are short scrubby bushes; willows growing in the arctic can be 100 years old but only 2' tall! Uses include ornamental landscaping, shade, basket-making, erosion control, timber, fuel and medicine. All parts, especially the bark, contain salicin, used for relief of pain and fever for hundreds, or even thousands, of years. Aspirin is a synthetic analog of salicin. Willows feed local wildlife, insects and birds. We plant them near the orchard to provide early season forage for our native pollinators. All prefer sun and loamy wet soils, but are adaptable, easily transplanted and fast growing. (1-2')

***S. alba* 'Britzensis' Coral Bark Willow**
15-30' x 12-15' Späeth intro, Britz, Germany, 1878. Also called *S. a.* var. *vitellina* 'Britzensis'. Fast-growing shrubby tree with highly ornamental red bark that starts yellow and graduates to coral. Especially splendid in the snowy winter landscape. Recommended for filling the winter flower vase. No water: just set the dormant branches in the vase and enjoy. The deep red stems will dry to a rusty red. The color is most striking on new growth, so give it an annual spring pruning or even cut it right to the ground. Every spring you'll get new 5–10' red stems. Typically narrow Salix leaves. Originally raised from seed by the famous nurseryman Ludwig Späeth whose lilac is one of the all-time favorites. Likes water, adaptable to a wide range of soils and conditions. Full sun to light shade. Z2. **ME Grown.**

576A Coral Bark Willow, $13.50



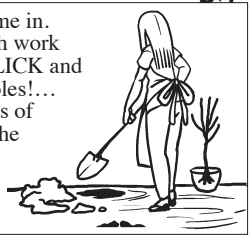
***S. gracilistyla* 'Melanostachys' Black Pussy Willow**
6-10' x same. Very attractive unique fast-growing plant for wetland areas. Deep purple-black male catkins in early spring; cut branches are marvelous for the dining table or kitchen windowsill. The rather short foliage emerges orange and then turns a deep green. Stems turn a rich purple-black in winter. Attractive dark colors all year. Winner of Royal Horticulture Society's Award of Garden Merit. Prune in summer or fall. Adaptable. Prefers moist soil but will tolerate dry as well. Native to eastern Asia. Z4. **ME Grown.**

577A Black Pussy Willow, $13.50

***S. g.* Mt. Aso Japanese Pink Pussy Willow** 6x6'
Possibly a hybrid of *S. gracilistyla* x *S. caprea*. Male specimen selected in Japan by Dr. Tsuneshige Rokujo. Pink buds open to cheery rosy pink catkins for a stunning early spring display of color. Excellent in cut flower arrangements. Foliage opens pink and turns rich blue-green with prominent veins and soft fuzzy undersides. Catkins form on second-year wood. Coppice just after flowering to keep form pulled in and less rangy. Easy to maintain. Prefers full sun and sandy soils but will do fine in average or moist conditions. Named after Mount Aso-san, Japan's largest active volcano. We can see why. The flowers of this specimen glow and warm in the stark early spring when little else is brightening up the landscape. Z4. **ME Grown.**

578A Mt. Aso Japanese Pink Pussy Willow, $13.50

"Digging 6 shrub holes about did me in. I didn't realize it would be so much work because it is so easy to CLICK, CLICK and buy. I can't 'click click' and dig holes!… I love your catalogs. They are icons of cultural splendor and portray just the sort of community that I love and admire."
–Margaret Warren, Enid, OK



Elderberry *Sambucus* spp.

Elderberry trees appear in myths from days of yore, thought to possess magical and protective powers. Dangling clusters of edible purple-black berries ripen in late summer on this broad vigorous multi-stemmed shrub. The fruit is highly nutritious and medicinal. A century ago, every grandmother knew how to make the perfect elderberry pie. Recipes for jam could be found in all the old farm cookbooks. Elderberries are making a big comeback as folks rediscover the scrumptiousness of elderberry jelly, cordial, elixir and wine. The large creamy-white flower clusters, or cymes, that cover the shrub in early summer make delicious fritters. Dry them for a fragrant wintertime cold-and-flu remedy tea. For centuries, humans have used this plant's medicinal qualities to treat a wide range of ailments and to boost the immune system. Hippocrates is said to have called the elder tree his "medicine chest." Birds love the fruit, and the blossoms attract beneficial insects and pollinators.

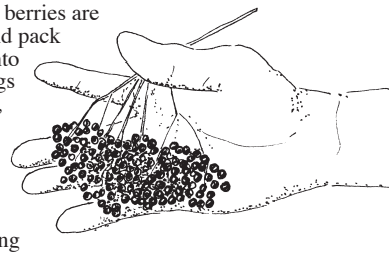
Note: Cooking elderberries is essential to breaking down toxic cyanide-inducing glycosides in the seeds. Not for fresh eating.

This year we are offering the European elderberry, *S. nigra*, in addition to our native *S. canadensis* and *S. pubens*. *Nigra* is more tender than the natives, but ours in Zone 4 seem to be almost as hardy. *Canadensis* and *nigra* are both delectable; *pubens* is an ornamental wildlife plant.

Elderberries are low-maintenance and easy to grow. With a little attention, they will provide strong yields of fruit for several decades. **Considered self-fertile but planting multiple varieties or even multiple species will improve fruit set**. (1-3')

ME Grown = grown in Maine at one of our small local nurseries.

Before cooking, remove elderberries from their stems. This can be done while the berries are fresh or frozen. We pick and pack entire panicles of berries into plastic bags and put the bags in the freezer. Once frozen, remove and whack the bag with a stick. The berries will easily fall from the stems. Snip a hole in the corner of the bag and the berries will roll out. Freezing will not damage the fruit.



Growing Elderberries

Elderberries are best grown in rich soil with a pH of 5.5–7.5 but are adaptable to a variety of soil types. They love compost! Add compost to the hole at the time of planting and every spring after that. They prefer moist soil but will tolerate poor drainage and temporary flooding. On the St. Croix River, we've harvested elderberries from the canoe! Plant in full sun. Susceptible to borers when weeds are allowed to crowd the base. Control weeds by mulching with a thick layer of hay, leaves or woodchips. Aggressive weeding around elders will disturb their shallow roots and risk injury to the plant.

Pruning for *S. canadensis*: in spring, while plant is still dormant, prune away any weak, broken or dead canes. New canes will emerge. Fruit is produced on both new and old wood but best sets are on one- and two-year canes. Periodically cut out the oldest wood. Alternately, some people prefer to cut elders back to the ground each year and treat them as perennials. The latter plants will produce fewer but larger clusters.

S. nigra fruits on second-year wood. It's ok to prune in spring, but be sure to leave first-year canes for the next season's yield.

"I was on the phone with Sam from Michigan this morning. Sam informed me that he has spent his time in quarantine reading his bible and the Fedco Trees catalog."
–Ann from Fedco Facilitation

***S. canadensis* 'Adams No. 1'** 6-12' x same. NY Ag Exp Stn intro, 1926. Selected in 1915 from the wild by William Adams in Union Springs, NY, and sent to Geneva where it was introduced 11 years later. Large berries and fruit clusters make for easy and fast picking. If you're heading to a potluck and need to make a pie in a pinch, Adams is the shrub you want. Very large vigorous strong productive bush. Z3. **ME Grown.**

582A Adams No. 1 Elderberry, $18.00

***S. c.* 'Bob Gordon'** 6-8' x same. MU intro, 2011. Wild seedling selected by Robert Gordon in Osceola, MO. Large clusters of large dark berries. High Brix levels makes this elderberry a good one for winemakers. Upright slightly spreading habit. Z4. **ME Grown.**

583A Bob Gordon Elderberry, $18.00

***S. c.* 'Goodbarn'** 5-10' x same. Chance seedling. Elwyn Meader intro, Rochester, NH. Professor Meader named this Goodbarn because it was the good elderberry growing under the eaves of his barn in New Hampshire. Another of the many fine plants Elwyn's son John has brought to our attention. Thanks, John! Hardy, vigorous with apparent self-fertility. It blooms heavily and produces large crops annually. Z3. **ME Grown.**

584A Goodbarn Elderberry, $18.00

***S. c.* 'Johns'** Up to 10' tall. (Adams No. 1 or Adams No. 2 x open-pollinated) Nova Scotia Exp Stn, 1954. Very vigorous. One particular cutting in our garden grew 5' in one season and had berries and flowers at the same time late into the summer. Z3. **ME Grown.**

585A Johns Elderberry, $18.00

***S. c.* 'Nova'** 6-8' x same. Open-pollinated seedling of Adams No. 2. EL Eaton intro, AgCanada Res Stn, Kentville, Nova Scotia, 1959. Selected in 1946 and named for its province of origin. Large sweet fruit matures early and uniformly. Suckers easily. Z3. **ME Grown.**

587A Nova Elderberry, $18.00

***S. c.* 'Wyldewood'** 6-12' x same. Selected from wild bushes in 1995, introduced in 2010, MU/MSU, by PL Byers and AL Thomas. A vigorous consistently high-yielding elderberry cultivar, popular in the Midwest. Some trials are showing it produces as much as Adams, if not more, and ripens a little bit later. Ours are lush and thriving. Z3. **ME Grown.**

589A Wyldewood Elderberry, $18.00

***S. c.* 'York'** 4-10' x same. Ezyoff x Adams No. 2. NY Ag Exp Stn, 1964. An old reliable, considered by some to be the largest-fruited and heaviest-bearing cultivar. In most of our Maine trials, this shrub is more compact than Adams, topping out at 4–5', but we've seen a 10' specimen growing on a compost pile. Persistent and will bear well for many years alongside other varieties. Heavy clusters of mildly tart large berries that ripen after Adams. Z3. **ME Grown.**

590A York Elderberry, $18.00

***S. canadensis* Elderberry Seedlings** Each one is grown from cold-hardy seed and will be a totally unique plant. Some of our best plants grew from batches of such seedlings. Z3. **ME Grown.**

591A Elderberry Seedling, $17.50
591B Elderberry Seedlings, bundle of 5, $75.00

***S. nigra* 'Korsor'** 6-8' x 2-5' Danish cultivar bred for heavy fruit clusters and excellent juicing quality. *Nigra* is the official medicinal species used in Europe. The berries are extremely high in immune-boosting anthocyanins. You can use them in all of the same wonderful ways you would use the *canadensis* species. Leaves are broader and darker green than other elderberries and the plant gives off a musky scent when you brush past it. Upright habit, extremely vigorous. Native to Europe. Z4/5. **ME Grown.**

592A Korsor Elderberry, $18.00

***S. n.* 'Samyl'** 5-8' x 2-5' Res Ctr for Hort intro, Aarslev, Denmark. Selected for juice production based on very high anthocyanin content and sweet flavor. Strong upright shoots yield dark glossy berries. Z4/5. **ME Grown.**

594A Samyl Elderberry, $18.00

***S. pubens* Red Elderberry** 12-20' x same, though often smaller when partially shaded. Also called **Scarlet Elder** and **June-Bearing Elder**. Ornamental elderberry and important wildlife plant. Commonly seen in the wild all over Maine, popping up in disturbed areas or along old barn foundations. Very cold hardy. To distinguish them from other elderberries, note their pyramidal flower panicles, the fire-engine–red berry color and the time of fruiting—early summer, not late. Great early forage for bees and birds, not recommended for humans. In his *Native Trees, Shrubs & Vines*, William Cullina states, "The most remarkable thing about scarlet elder is not just the brilliant color of the fruits but their ripening in midsummer, when green dominates the landscape. Amid shades of emerald, moss, jade, and olive, the clusters of scarlet berries practically leap to your eye." We agree! Native to the U.S. Z3. **ME Grown.**

595A Red Elderberry, $16.00

***Spiraea tomentosa* Steeplebush** 2-4' x same. Seeing this bonny little plant makes a heart leap with joy. Seriously, it's adorable, and we and the pollinators are obsessed with it. A must for every butterfly garden. Rosy pink steeples emerge as terminal spikes about 4–6" tall, appearing mid-late summer and lasting at least a month. Foliage is medium green, serrated with woolly undersides. Easy to grow. Lovely en masse. Likes average acid moist soils but not picky. Full sun or part shade. We've seen it emerge in newly cut woodlots on dry soil and thriving on pond edges, as single canes or in clumps with multiple blooms. No serious pest or disease issues. Native Nova Scotia to Georgia and inland. Z3. **ME Grown.** (1-3')

598A Steeplebush, $15.50

ME Grown

Unlike most nurseries whose stock is grown in large centralized locations, Fedco features a diverse conglomeration of plants, increasingly sourced from small farms right here in Maine. During our four decades of dedication to local agriculture, we've developed a resilient network of Maine growers who strive to raise healthy hardy plants using sound practices. We support this network by helping to source propagation materials, troubleshooting problems in the field, and paying fair prices for stock. Our growers often work together, sharing scionwood, seeds and cuttings, as well as information on best growing practices.

In addition to building a strong community of growers, Fedco strives to offer plants that are themselves adaptable to the often harsh and unpredictable northern climate. Nursery plants propagated from local material and cultivated in similar environmental conditions as their eventual planting sites are known as the "local ecotype." This means that our locally grown trees and shrubs, which have been through the extremes of severe Maine winters, cycles of freezing and thawing, and periods of drought, are well suited to adapt to life in other northern locations.

Fedco growers go to great lengths to propagate some of our favorite plants. As a result, our catalog features a swath of Maine ecotypical seedlings from colonies of bayberry along the Penobscot Bay; from bur oaks, black walnuts and butternuts towering in the dooryards of old farmhouses; and from hundreds of apples found in old Maine orchards. Behind many of the plants we offer, there's a story: a blustery winter ferry ride to a coastal island to collect scionwood from a rare apple tree; a stinky afternoon gathering the putrid fruits of magnificent old ginkgo trees from the sidewalks in Portland; scrambles up and down the banks of a river, magnifying glass in hand, looking for the true American cranberry.

We are always hunting for local plant specimens, such as the elusive northern spicebush (*Lindera benzoin*), and for new exciting apples, pears, plums and other fruits that do well in our bioregion. Do you know of any excellent local specimens that you would like to see propagated? Please get in touch!

Lilac ***Syringa*** **spp.** Lilacs have been a fixture in the New England landscape for generations. More often than not, when we find old apple trees, the ancient lilacs are not far away. The large rambling suckering shrubs continue to flourish each spring long after the buildings have disappeared and all that remains of homesteads are crumbling stone foundations. Why were the lilacs always planted just outside the kitchen door? On cold winter mornings, someone would clean out the wood stove and sprinkle ashes on the icy path to the backhouse. Or maybe the path to the woodshed or the clothesline. Over the years, the earth outside the kitchen door became more alkaline, which lilacs love.

In the landscape, lilacs are excellent alone or in hedges. Deep green glossy heart-shaped foliage looks good from spring through fall. Intensely fragrant blooms in May over a period of several weeks. Hundreds of varieties have been developed over the ages. Flowers range from singles to doubles, pure white to the deepest purple, not to mention pinks and reds and lavenders of every persuasion. Ornamental, edible (frittered flowers à la elderberry), medicinal, and a great Mother's Day gift. (1-3')

S. patula **'Miss Kim'** 8x8' NH Ag Exp Stn, 1954. Heavily scented extremely prolific small single ice-blue lavender blooms appear after the *vulgaris* types have gone by. Red-purple buds. Descended from one of the twelve seeds that plant-breeder Elwyn Meader collected on a hike in 1947 while stationed in Korea as an Army horticulturist. Very compact rounded form. A number of years ago, a customer sent us a photo of her "Fedco" Miss Kim and wrote, "If you look closely at the photo you can see a few of the many, many butterflies that would cover these lilacs, almost like the blooms themselves." Z3.

599A Miss Kim Lilac, $16.50

S. vulgaris **'Charles Joly'** 10x10' Victor Lemoine et Fils intro, Nancy, France, 1896. Purple buds and highly fragrant dark reddish-magenta double flowers on somewhat narrow 4–6" moderately loose panicles. Our notes call it a bright rosy-pink-purple. One of the best of all the reds. Lighter and redder than most of the standard varieties. Narrow upright habit with some suckering. Z3.

600A Charles Joly Lilac, $16.50

S. v. **Common Purple** 12-15' x same. A mass of medium-light purple blooms every year. A magnificent New England sight for nearly 400 years. When a friend looked out John's living room window and thought he had some fancy new cultivar, John chuckled, "Nope, just the good old common purple." Never disappoints. Suckers freely, the best lilac for a spreading hedge. Z3.

601A Common Purple Lilac, $16.50

S. v. **'Mme Lemoine'** 12x12' Marie Legraye x open pollinated. Victor Lemoine et Fils, Nancy, France, 1890. The standard by which other white lilacs are judged. Very fragrant large pure white double flowers in clusters so thick the shrub looks like one massive bloom. Slightly open wide-growing shrub. Provides a beautiful accent for the pinks and purples. A favorite of the late plantsman Roger Luce of Newburgh, ME, who maintained a magnificent collection of lilacs for many years. Z3.

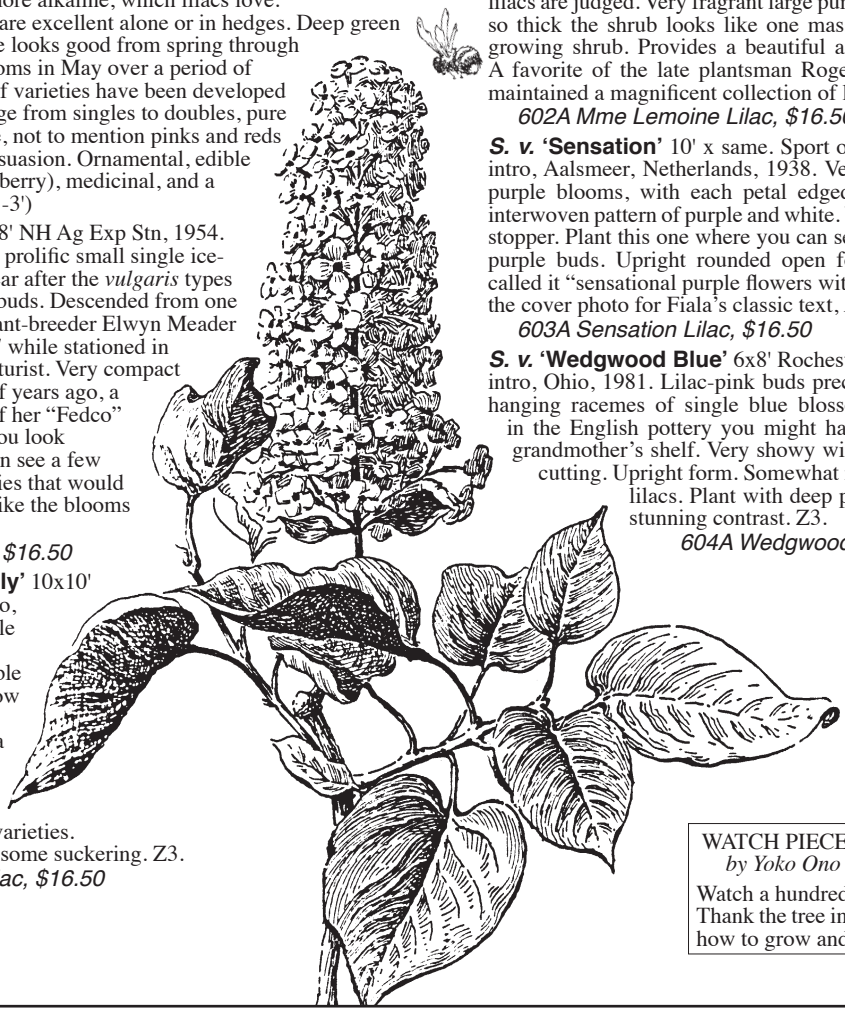
602A Mme Lemoine Lilac, $16.50

S. v. **'Sensation'** 10' x same. Sport of Hugo de Vries. Dirk E Maarse intro, Aalsmeer, Netherlands, 1938. Very fragrant large single reddish-purple blooms, with each petal edged in pure white. The effect: an interwoven pattern of purple and white. Unique and beautiful, a real show stopper. Plant this one where you can see it from not too far away. Deep purple buds. Upright rounded open form. *Fine Gardening* magazine called it "sensational purple flowers with pinstripe margins." Selected as the cover photo for Fiala's classic text, *Lilacs: The Genus Syringa*. Z3.

603A Sensation Lilac, $16.50

S. v. **'Wedgwood Blue'** 6x8' Rochester x Mrs. August Belmont. Fiala intro, Ohio, 1981. Lilac-pink buds precede large beautiful wisteria-like hanging racemes of single blue blossoms. Named for the blue color in the English pottery you might have seen collecting dust on your grandmother's shelf. Very showy with a fine fragrance. Excellent for cutting. Upright form. Somewhat more modest in stature than most lilacs. Plant with deep purples and reddish magentas for stunning contrast. Z3.

604A Wedgwood Blue Lilac, $16.50



CLOUD PIECE
by Yoko Ono
Imagine the clouds dripping.
Dig a hole in your garden to put them in.

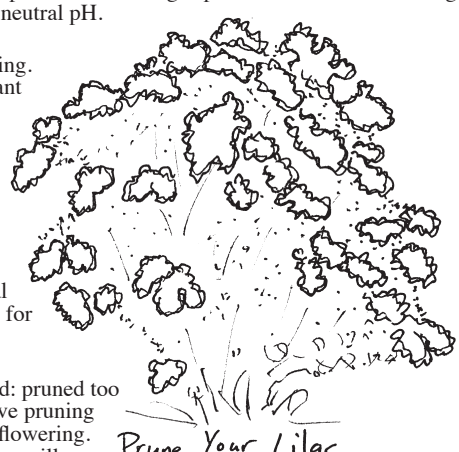
WATCH PIECE I
by Yoko Ono
Watch a hundred-year-old tree breathe.
Thank the tree in your mind for showing us how to grow and stay.

Growing Lilacs

Lilacs are adaptable, easy to grow, nearly indestructible and practically maintenance-free. Plant them in a well-drained location in moderately rich soil. Sandy gravelly loam is perfect. They prefer at least 6 hours of sunlight each day. We suggest planting them with a shovelful of wood ash or lime, then add another shovelful of either every 3 years. A yearly mulch of manure or compost will encourage spectacular annual blooming. Pink, lavender and blue lilacs color up best in soil with a neutral pH.

How to prune lilacs

If you choose to prune your lilacs, do it right after flowering. Late-season pruning removes next year's buds. As the plant matures, prune off a quarter of the new suckers and the oldest growth (a few main stems each year). Some growers prefer to keep the plant low and bushy. Do so by "topping" it off every year: prune any upright branch back to a junction with a lower branch. Others prefer a tall tree-like form. Our friends Philippe and Danielle have let theirs soar to 8' or more, removing the lower branches and creating a magical walkway in the process. Lilacs are more than willing to cater to your own personal vision. Have fun! No need to cut off spent flowers except for appearance.

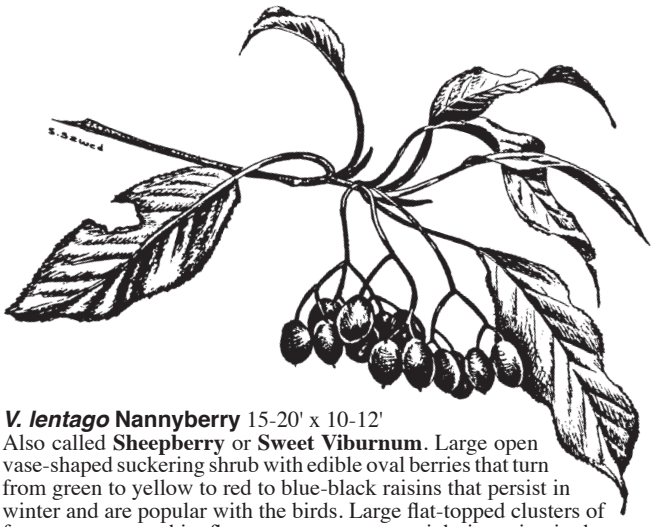


Why isn't my lilac blooming?

Too shady: lilacs need sun to form blossoms. Over-pruned: pruned too late, removed buds. Also, some plants respond to excessive pruning by putting their energy into vegetative growth instead of flowering. Too wet: lilacs like well-drained soil. Over-fertilized: lilacs will bloom well without assistance. Too much fertility can lead more vegetative growth and inhibit bud formation.

Viburnum cassinoides **Northern Wild Raisin** 5-6' x same. Also called **Appalachian Tea**, **Raisinberry** or **Witherod** (pronounced *withe*-rod, not *wither*-rod.) Rounded arching dense suckering native shrub. Creamy white flowers with yellow stamens on 2–5" flat-topped cymes bloom from spring to early summer. Highly desired for its edible fruit, which turns from green to pink to red to blue before finally turning black in September. Fruiting clusters feature several colors at the same time. Best eaten when nearly dried out on the branch, if you can get to it before the birds! Foliage, once used in tea, emerges bronze or purple tinted, turning dark green when mature and then orange-red, dark crimson and purple in fall. Good as a specimen but **plant more than one for fruit**. Sun to partial shade. Very rugged: adapts to dry or wet sites. Native to eastern North America. Z3. (1-3')

607A Northern Wild Raisin, $18.00



V. lentago **Nannyberry** 15-20' x 10-12'
Also called **Sheepberry** or **Sweet Viburnum**. Large open vase-shaped suckering shrub with edible oval berries that turn from green to yellow to red to blue-black raisins that persist in winter and are popular with the birds. Large flat-topped clusters of fragrant creamy white flowers are a common sight in spring in the Maine landscape. Shiny foliage, purplish red in fall. Medicinal bark and leaves. Recommended for naturalizing, bird and wildlife habitat, screens and borders. Prefers moist well-drained average soils but adaptable to poor, compacted or dry soils. Sun or shade. **Self-fertile, but plant two or more for better pollination** and fruit production. Native to eastern U.S. and Canada. Z2. (1-3')

608A Nannyberry, $15.00

V. prunifolium **Black Haw** 12-15' x 8-12'. Creamy white 2–4" cymes bloom in early spring while leaves are still opening, attracting dozens of different pollinators. Lustrous green leaves, narrow-to-oval with pointed tips, turn to bronze-red in fall. Dark bluish-black 1/2" fruits with a waxy bloom form hanging clusters through fall, in a similar way to highbush cranberry. Long used as a food source, eaten raw or put away in preserves. Rounded arching shrub stiffly branched, reminiscent of a wild hawthorn or crabapple. Suckering nature allows it to form a dense colony or hedge, but it can also be pruned as a nice specimen that can reach 20–30' in height. Transplants easily and is adaptable to many soil types, moist to dry, sun to shade. **Two or more plants are required for fruit.** Appears to be disease and pest free. Native to eastern U.S. Z3. (1-3')

609A Black Haw, $15.00
609B Black Haw, bundle of 5, $65.00

Special Plants for Challenging Locations

Drought Tolerant:	**Wet Tolerant:**	**Shade:**
Amelanchier	Amelanchier	Black Cohosh
Carolina Allspice	Birch	Bunchberry
Catmint	Black Cohosh	Pagoda Dogwood
Chokeberry	Highbush Blueberry	Ferns
Cornelian Cherry	Chokeberry	Balsam Fir
Chestnut	American Cranberry	Wild Ginger
Elm	Dawn Redwood	Hazelnut
Grape	Redosier	Hops
Heather	Elderberry	Hosta
Hens & Chicks	Elm	Jack-in-the-Pulpit
Lavender	Ferns	Lady's Mantle
Lilac	Blue Flag Iris	Sugar Maple
Lingonberry	Marshmallow	White Pine
Nannyberry	Swamp Milkweed	Pulmonaria
Ninebark	Northern Wild Raisin	Spicebush
Beach Plum	Spicebush	Wintergreen
Rosa Rugosa	Willows	Witch Hazel
Spruce	Winterberry	
	Witch Hazel	

Groundcovers

You'll find more groundcovers, like Canadian wild ginger, bunchberry, sweet woodruff, geranium and arnica, in the herbaceous perennials, beginning on page 55.

Calluna vulgaris **Heather** Magical, mythical and medicinal evergreen groundcover features a spread of flowers and foliage that change color throughout the season. Heathers are our guilty pleasures—for every two you buy, we buy like 20 for our own gardens! Each year we vary our selection but always offer the hardiest varieties proven to flourish in northern climates. Revered in the British Isles, important medicinally in teas, honey, liniments and ointments. First fermented a few thousand years ago, used in gruit, ale, and might be the original ingredient for the first whiskey. Branches used in thatching, bedding, basketry, rope and broom-making. Flowers attract bees, butterflies and moths, especially when planted in masses. Recommended for rock gardens and edges of paths—or for opening the portals to the fairy world.

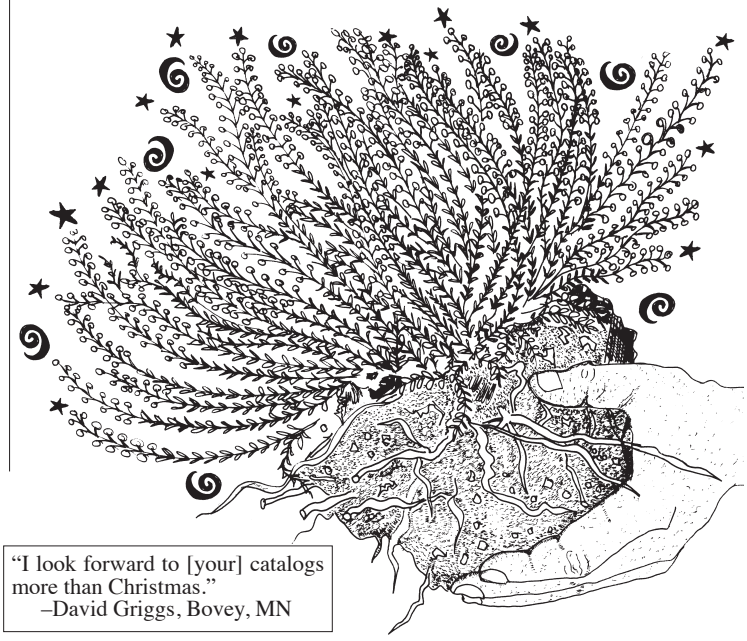
Requires acidic soil and full sun to partial shade. Plant about 18" apart each way and let it spread. Mix peat into the soil to lower the pH if necessary—see planting instructions for cranberries and blueberries. We recommend pine needles as an acidic year-round mulch. Does not like high fertility or wet spots. Full sun and windy exposures intensify their colors. Shear every April for best bloom. Native to the dry forests, heaths and bare grounds of Britain and Ireland. More recently naturalized in North America. Z4. (4" pots)

C. v. **'Firefly'** 1-2' x 1-2' In early spring vibrant yellow-green foliage emerges followed by tiny orange-red flower buds in June. A step back, the overall visual is a rainbow tie-dye as mauve flowers awaken from their buds in August. They'll linger into October, and maybe even through winter. Salmon-red foliage turns to dark brick-red in late fall through winter. So far, this is among our top favorites. Upright habit.

L622A Firefly Heather, $12.00

C. v. **'H.E. Beale'** 1-2' x 1-2' Upright stems are almost completely covered with miniature urn-shaped double pink flowers August through October. Dark green foliage fades to bronze in winter. Well known in the trade.

L623A H.E. Beale Heather, $12.00



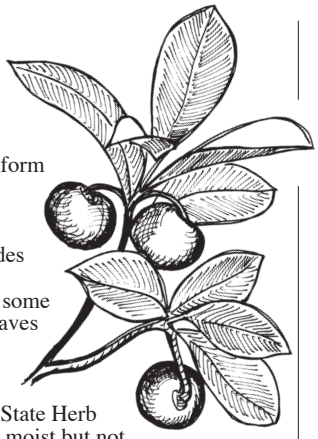
"I look forward to [your] catalogs more than Christmas."
–David Griggs, Bovey, MN

Shearing Heather

Heathers need to be pruned back every April or they will become woody and bare in just a few short years. The stems will not produce new growth where they flowered the previous season. Once these bare areas get leggy, they will no longer produce foliage at the base. If the plant is cut back to a woody base, no new growth will occur and your heather will be on a downward spiral. If you're not up for shearing, heathers might not be for you.

Shearing can be done with regular clippers like Felcos or with larger shears. Just roughly cut the stems below where they flowered the season before, leaving a few inches of foliage at the base. If done every year it should look like a little mound with a haircut. Next thing you know, bright new growth will start emerging. Shearing not only makes the plants look better but also makes them stronger and more resistant to fungal problems.

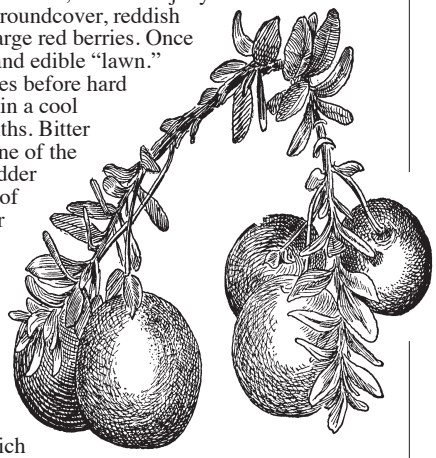
More Groundcovers



***Gaultheria procumbens* Wintergreen**
6–10" tall with a 1–3' spread. Also called **Eastern Teaberry**. Herbaceous aromatic rhizomatous evergreen groundcover native to the woodlands of eastern North America. Glossy dark green elliptic-to-oblong leaves form on erect stems. Nodding bell-shaped waxy white flowers bloom from the leaf axils in June. Flowers give way to vivid red berries. Leaves will take on beautiful burgundy shades in the fall. Excellent winter food source for free-range chickens, partridge, turkeys, and some two- and four-legged mammals. Fragrant leaves contain methyl salicylate, a potent external anti-inflammatory, and can be used to make a poultice or massage oil to ease arthritic pain and sore muscles. Designated Maine's State Herb in 1999. Plant 16" apart in dappled shade in moist but not boggy woodland soil. **Self-pollinating.** Z3. (3½" pots)

L625A Wintergreen, $8.00
L625B Wintergreen, bundle of 3, $20.00

***Vaccinium macrocarpon* 'Stevens' American Cranberry**
This is the cranberry of holiday sauces, bread and jelly. Dense low lustrous evergreen groundcover, reddish purple in fall and loaded with large red berries. Once established, makes a beautiful and edible "lawn." Handpick or rake like blueberries before hard frost. Use fresh, freeze or store in a cool basement or root cellar for months. Bitter and alkalizing effects make it one of the most common remedies for bladder infections. An excellent source of vitamin C. Annually flooded for frost protection and harvesting convenience in commercial operations, but not necessary in home plots. Adaptable to everything from bogs to dry rocky outcroppings. Self-pollinating. Easy to grow; pest and disease resistant. Native to northeastern U.S. and Canada. Comes in a bushy 6" clump which can be carefully divided or planted as a whole and divided in future years. Z2. **ME Grown.** (1-gallon pots)



626A Stevens American Cranberry, $20.00

Growing American Cranberries

American Cranberries are shallow-rooted and require light acid soil (pH 4.0–5.5), preferably cool, moist and high in organic matter, similar to soil in which blueberries grow well. Will grow in dry locations. Plant them in spring once the ground can be worked in a bed or in a naturalized setting.

We do not recommend mixing in sulfur to acidify the soil. Sulfur is slow-acting and can be added to soil surface in subsequent years if necessary. Mixing it into the soil can damage tender young roots.

For a 5x5' bed:

For acidic "blueberry" soils: If you're fortunate to have a site where blueberries grow naturally, clear a spot of vegetation, cultivate the soil, add some peat and sand if you like, and you're ready to plant.

For sandy soils: Remove soil 10" deep and mix soil with 2 bales of damp peat moss. Replace mixture in bed and cover with 2" of sand.

For clay or silty soils: Remove soil 10" deep and place it around the edge of the bed as a berm. Replace the soil with a 50-50 mix of soil and peat (about 2 bales of peat). Cover with an additional 2" of sand. Plant cranberries 12" apart, so the roots are in the peat and the sand is covering the lower portion of the stems.

Remove all weeds as needed. Water the plants weekly so that the peat is moist but not saturated. Add nitrogen at a rate of ⅓–1 lb (or 20–50 lbs of manure) per 100 sq feet each year. No pesticides should be necessary.

Handpick before first hard frost when berries are red.

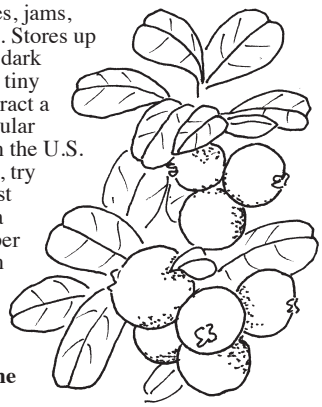
In late fall, cover the bed to protect the plants from the drying effect of winter winds. Use a mulch of leaves or pine needles; or cover with polyester row cover and then clear plastic; or cover with row cover and then plenty of leaves.

Remove mulch in early April. Protect flower buds by covering with plastic during frosty nights.

Every two years partially cover the plants with a ½–1" layer of sand in spring before growth begins. This will help produce more berries and keep weeds down.

Lingonberry *V. vitis-idaea*

Also called **Foxberry**, **Cowberry**, **Mountain Cranberry**. Vigorous shallow-rooted spreading groundcover is related to blueberries and cranberries. Bright red glossy nutritious fruits are slightly smaller than lowbush blueberries. Tart until dead ripe, then has excellent flavor, richer and less astringent than cranberries. Can be eaten fresh but primarily used in sauces, jams, syrups, fruit leathers, juices and wines. Stores up to 2 months in the fridge. Small shiny dark green foliage is quite lovely. Adorable tiny bell-shaped white flowers in spring attract a plethora of pollinators. Extremely popular in Scandinavia and now catching on in the U.S. If you've got good soil for blueberries, try these. Ripens in late summer but is best after a frost. Harvest by hand or with a blueberry rake. Will produce 1–2 lbs per plant depending on the variety and can produce for up to 20 years. Prefers full sun and poor sandy acid (pH 4.5–5) soils. Plant 12–18" apart in rows 3–4' apart. **To ensure good fruit production, plant more than one variety.** Native to the colder northern hemisphere. Incredibly tough and very hardy. Z2. All are **ME Grown.** (potted transplants)



***V. v.-i.* 'Erntedank'** Up to 12" tall. Albert Zimmer intro, 1975. Collected in a wild heath near Uchte, Germany. Produces heavy yields of small- or medium-sized berries.

628A Erntedank Lingonberry, $18.50

***V. v.-i.* 'Erntesegen'** 12-15" Also collected by Zimmer from a wild German heath. High-yielding plant produces very large berries.

629A Erntesegen Lingonberry, $18.50

***V. v.-i.* 'Linnea'** 5-9" Swedish U intro, 1999. Newer cultivar selected from an open-pollinated seedling of Sanna, a wild strain. Strong producer of medium-sized berries.

630A Linnea Lingonberry, $18.50

***V. v.-i.* Magenta** 12-15" Swedish U of Ag Sciences intro. Vigorous cultivar produces large purplish-red berries. Selected for high yields.

631A Magenta Lingonberry, $18.50

***V. v.-i.* 'Red Pearl'** 12-18" Elden Stang intro, Holland, 1983. Very adaptable, produces large berries. Somewhat lower yielding, but standard in commercial production as an excellent pollinator. May bloom twice in one season.

632A Red Pearl Lingonberry, $18.50

***V. v.-i.* 'Red Sunset'** 8-15" Hartmann's Plant Co intro. Medium-to-large firm flavorful berries. Considered one of the most vigorous cultivars.

633A Red Sunset Lingonberry, $18.50

***V. v.-i.* 'Regal'** 4-8" WI-108, Univ of WI intro, Madison, WI, 1994. From open-pollinated seed collected in southwest Finland. Produces firm small-to-medium berries with good flavor. May bloom twice in one season.

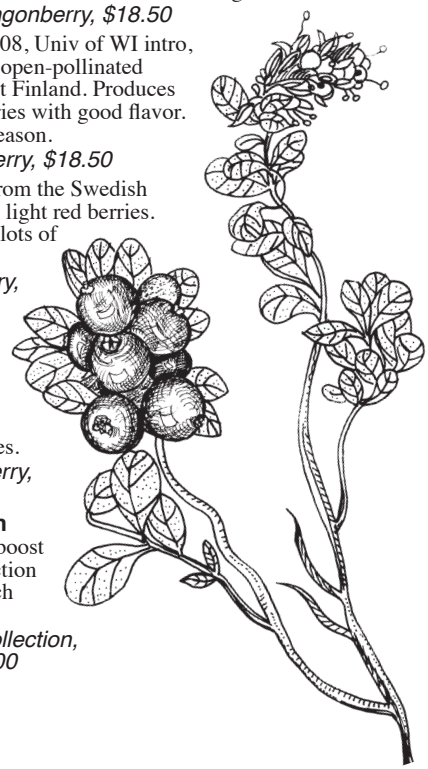
634A Regal Lingonberry, $18.50

***V. v.-i.* 'Ruby'** 12" Also from the Swedish U program. Medium-sized light red berries. Moderately vigorous with lots of spreading rhizomes.

635A Ruby Lingonberry, $18.50

***V. v.-i.* 'Sussi'** 4-8" Sometimes spelled *Susi*. Patented by the Swedish Ag Dept, 1985. Medium-to-large berries. Excellent pollinator for other varieties.

636A Sussi Lingonberry, $18.50



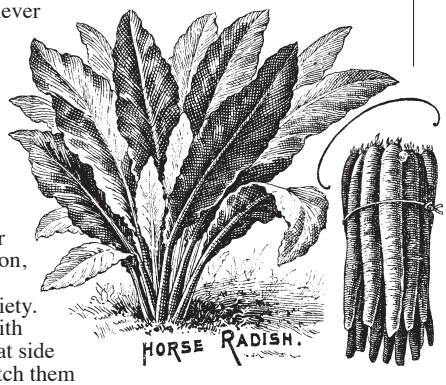
Lingonberry Collection
Get your patch going and boost pollination with this collection of 5 different varieties, each individually labeled.

639A Lingonberry Collection, bundle of 5, $82.00

Garden Roots

No garden is complete without the classic triumvirate of Horseradish, Asparagus and Rhubarb!

***Armoracia rusticana* 'Big Top' Horseradish** Exceptionally vigorous perennial with large dock-like leaves and spicy hot roots, savored for centuries for their culinary and medicinal qualities. Horseradish tea is said to be an effective control for brown rot on stone fruits. Deep taproot with numerous shallow runner roots. Choose carefully where you plant it because you may never get it all out. Even the tiniest root piece will produce a new plant. Leaves can be cooked as greens. Roots are traditionally harvested in the fall, but you can dig them anytime. Roots keep 3–4 months in the fridge. To use as a stimulant, grate the fresh roots and mix with a little lemon juice or apple-cider vinegar and refrigerate. Use soon, then make more. Big Top is an especially disease-resistant variety. Prefers moist rich soil. Plant with the slanted cut down and the flat side up, or just toss them in and watch them grow. Native to northern Europe. Z3. (roots)



L640A Big Top Horseradish, bundle of 5, $18.00

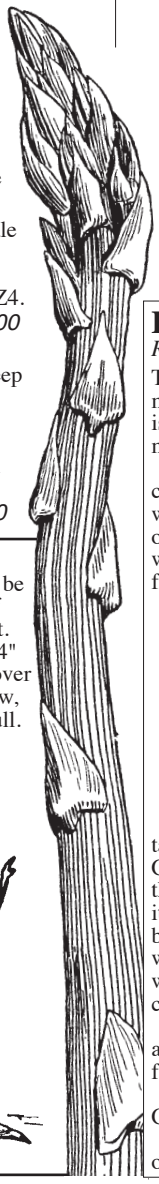
***Asparagus officinalis* Asparagus** A spring staple for millennia, may have originated around the Mediterranean Sea, perhaps in Asia Minor. The pharaohs, Greeks and Romans were all aware of its highly nutritious qualities and delectable flavor. The earliest known American horticultural advertisement, from March 1719, is for "English Sparrow-grass Roots." Uncut shoots become a light green feathery hedge, a beautiful backdrop to a flower garden. Honeybees love the dainty dangling flowers of asparagus. Occasionally non–spear-forming females will show up in a planting. Leave them be or rogue them out as you wish. John visited friends who added Biochar to their soil. Wow, were their stalks beefy! (large-rooted 1-yr crowns)

***A. o.* 'Jersey Supreme'** Early. Rutgers U intro, 2000. All-male hybrid that is more productive than the older all-male varieties. Excellent tolerance to asparagus rust and fusarium crown rot. Produces high yields of large-diameter tender spears in spring. Z4.

L641A Jersey Supreme Asparagus, bundle of 25, $25.00

***A. o.* 'Purple Passion'** Early. Developed from the Italian heirloom Violetto di Albenga. Brian Benson intro. Very large deep purple stalk with a creamy white interior. Purple asparagus is actually a type of white asparagus shown the light. Sweeter and less stringy than its green counterparts, so you can use more of the spear. Tender enough to eat raw in salads. Turns green when cooked. Z4.

L642A Purple Passion Asparagus, bundle of 25, $25.00



Growing Asparagus

Plant when you receive your order or as soon as the ground can be worked. Requires fertile soil with pH 6.8–7.2 and high levels of phosphorus. Plant 14–18" apart, 6–10" deep, in trenches 4' apart. Or dig your trenches somewhat deeper and fill the bottom with 4" of compost and rotted manure. Lay plants with crown up and cover with 2" of soil. Plants emerge very slowly. As young shoots grow, add soil gradually, just covering the shoots, until the trench is full. In late fall, remove dead stalks and mulch with 3" of manure.

Second summer: Add lime, rock fertilizers and compost as needed. Control weeds but do not injure crowns.

Later years: Same routine but increase fertilizer. Be sure to leave some spears each year to grow stalks that will nourish the roots and give you more spears next year. Keep the bed weed-free and mulched heavily.

Harvest: New research shows that asparagus can be selectively harvested for 2 weeks during the second growing season, for 4 weeks in the third, and a full season thereafter. We recommend caution in harvesting too much too soon. Before the third or fourth season, harvest only the largest shoots from vigorous plants so the young plants can establish themselves.

***Rheum rhabarbarum* Rhubarb Seedlings** Seedlings of heirloom variety 'Victoria'. Famous for early summer pie and wine, but also good in sauce, bread, juice, soup or cooked with meat and fish. Rhubarb's clumps of juicy acid leaf stalks were once a staple food. The root is a toning purgative herb traditionally used every spring for thousands of years. There are dozens if not hundreds of rhubarb varieties. May have originated in Siberia and been carried across Asia on the Silk Road to Turkey and then into Europe. Victorian cookbooks included rhubarb compotes, fools and charlottes. Eventually brought to North America through the efforts of Ben Franklin and John Bartram. Low-maintenance, will continue through summer if flower stalks are removed and new leaves allowed to grow. Leaves are not edible.

From our trials, we've learned that rhubarb rarely comes true to type when grown from seed, a fact often undisclosed in the nursery trade. We are offering seedling crowns grown on a local organic farm. There will be variation within the crop. Some stalks will be green with deep red bases and others will be solid green or splashed with red. All are vigorous and delicious, and we've enjoyed them in our pies, wines and sauces. Z2. **ME Grown.** (1-yr crowns)

L643A Rhubarb Seedling, $12.00

Growing Rhubarb

Plant the top of the root division level with soil surface in well-prepared well-drained rich slightly acid soil (pH 5.5–6.5). Space crowns 2–4' apart in rows 3–4' apart. Add a bushel of well-rotted manure or compost under each crown. When plant is established, fertilize liberally with composted manure and balanced garden fertilizer or compost every spring, as it's a heavy feeder. Harvest for 4 weeks 2 years after planting. Thereafter you can harvest for 8–10 weeks each year. Never remove more than 2/3 of the stalks from a plant. Water during dry spells for extended season.

Every 10 years or so, divide plants in early spring, leaving about 1/3 of the crown in place. Cut up the remainder into fist-sized pieces and replant.

Rhubarb Tkemali

Recipe from Khris Hogg, owner of Perennial Cider Bar in Belfast, ME.

This tart and savory sauce is based on a Georgian condiment traditionally made from a specific type of sour plum that we don't have here. Rhubarb is a great alternative, and although we haven't tried it yet, Beach Plum might be an even more accurate local rendering of the original.

We enjoy this with chicken, seafood, or as a spread on toast with fresh cheese. It can also be stretched with oil into a salad dressing, or blended with fresh mayonnaise for a sandwich spread or dressing for pasta salad or other cold dishes. The seasoning amounts can be tweaked to your taste without ruining anything. This sauce freezes well, so you can savor the freshness of spring whenever you'd like. Recipe makes about 2 cups.

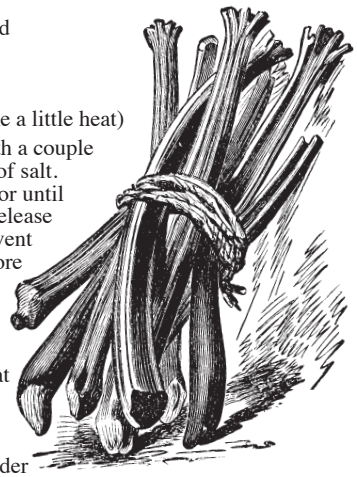
1 lb rhubarb, chopped into 1" chunks
1 Tbsp vinegar (red wine is traditional, but apple cider vinegar works)
2 cloves fresh garlic, chopped
1 Tbsp cumin, freshly ground
1/2 tsp coriander, freshly ground
1/2 c. cilantro, chopped
1/2 c. dill, chopped
Salt to taste
1/4 tsp ground chiles (if you like a little heat)

In a small pot, add rhubarb with a couple tablespoons of water and a pinch of salt. Cover and simmer for 5 minutes, or until the rhubarb begins to soften and release its juice. Stir once or twice to prevent burning. Resist the urge to add more water—there should be enough water in the rhubarb to make a cooking liquid.

Stir in vinegar, garlic, cumin and coriander. Simmer on low heat for another 5 minutes.

Turn off heat and stir in herbs. Cover and let sit for 5 minutes.

Puree with an immersion blender or food processor. Salt to taste.



Mushrooms

Many of us are crazy about mushrooms. We love hunting for them in the damp forests during spring and fall, cooking them, tincturing them or just admiring their mysterious beauty. People have cultivated mushrooms for thousands of years. Around a century ago, American seed catalogs offered mushroom spawn bricks for 30¢ each, right there between the melons and the mustard greens.

We're excited to collaborate with North Spore Mushrooms to offer the following selections for you to get started on your own fungus garden. These products are all Maine-grown without pesticides, on natural substrates. Available as plug spawn and sawdust spawn. All can be refrigerated until you are ready to start growing. We send detailed instructions with your order and you can find more info about each item on our website. We ship mushrooms and tools in April during our regular shipping season. If you're a beginner, consider starting out with a kit.

Spawn For each type, we offer one or more of the following options:

• **Plug Spawn** Small wooden dowels colonized by mushroom mycelium. 50 plugs will inoculate a single 4' long, 4" diameter log. Drill 5/16" holes (or 8.5mm with angle-grinder adapter) into your log, hammer in the plugs and seal the holes with wax. Plugs are an excellent choice for beginners. **Plugs come in bags of 100 or 500.**

• **Sawdust Spawn** Hardwood sawdust colonized by mushroom mycelium. **Each bag contains 5½ lbs of inoculated hardwood sawdust**, enough for about 25 logs. Drill 12mm holes in your logs, pack the sawdust using an inoculation tool and seal with wax. Good for commercial mushroom growers. Note: Wine Cap may be grown on hardwood sawdust in garden paths. Almond Agaricus can be mixed into compost for the garden. All other types are grown on logs.

• **Plug Kits** A kit contains 100 plugs, a small block of wax with dauber, 5/16" drill bit and instructions. Everything but the log, drill and hammer to get you started growing mushrooms. Available for all types except Almond Agaricus, Chicken of the Woods and Wine Cap.

• **Countertop Kits** Grow mushrooms in the kitchen on this inoculated sawdust loaf! Simply slice open the bag, and keep in a humid environment, like beside the sink. Mushrooms should start to produce "pins" within two weeks and will grow quickly. Each kit contains a 5-lb inoculated sawdust block that could produce up to 3 lbs of mushrooms over 2–4 months. Instructions included. Available for Grey Oyster, Golden Oyster, Lion's Mane and Shiitake. The easiest way to get into growing mushrooms. Makes a great gift.

What You'll Need These mushrooms will fruit best on hardwood logs or sawdust. Instructions will include recommended log species lists. Depending on the product you choose, you will need to provide your own hammer and drill. Here are a few tools to help you get started:

Inoculation Tool A simple hand tool for rapid inoculation of hardwood logs with sawdust spawn. (Not needed for plug spawn.) Use with 12mm drill bit holes for best results.

L649A Inoculation Tool, $40.00

Angle Grinder Adapter Used to attach a drill bit to an angle grinder to increase speed on large projects. Fits 5/8" spindle and takes both 12mm and 8.5mm drill bits.

L650A Angle Grinder Adapter, $50.00

5/16" Drill Bit Low-speed drill bit for small-scale plug-spawn projects.

L651A 5/16" Low-Speed Drill Bit, $7.00

High-Speed Drill Bits Specifically made for log inoculation, designed to clear the hole of sawdust as it drills to a set depth that matches plug length or sawdust dosage. For large projects, we recommend an angle grinder adapter with an 8.5mm bit for plug spawn or a 12mm bit for sawdust.

L652A 8.5 mm High-Speed Drill Bit with Stop Collar, $20.00
L653A 12 mm High-Speed Drill Bit with Stop Collar, $20.00

Sealing Wax A clear food-grade cheese wax ideal for sealing holes in inoculated logs. One pound of wax is enough to seal about 10 logs. Sealing the holes is critical to success because it protects the spawn from drying out and from contamination. Wax is in granular form.

L654A Sealing Wax, 1 lb, $6.00

***Agaricus subrufescens* Almond Agaricus** Related to the well-known portabella, crimini and button mushrooms but has its own unique aroma and flavor reminiscent of almonds. The species grows on composted material and thrives in warmer temperatures. A great addition for the home gardener, can be incorporated with compost into vegetable and perennial plantings and does well in season-extension structures. (Available as sawdust spawn only.)

655C Almond Agaricus Sawdust Spawn, $20.00

***Hericium erinaceus* Lion's Mane** Pure white cluster of icicle-like teeth, often found on beech and birch in the wild. When cooked, they have a consistency similar to crab meat. Naturally fruits during cooler months. Due to a slower colonization rate, a higher inoculation rate should be used. Can be grown on many different hardwood species, large- or small-diameter logs.

L656A Lion's Mane Plug Spawn, bag of 100, $15.00
L656B Lion's Mane Plug Spawn, bag of 500, $32.00
656C Lion's Mane Sawdust Spawn, $20.00
L656D Lion's Mane Plug Kit, $25.00
656E Lion's Mane Countertop Kit, $25.00

***Laetiporus sulphureus* Chicken of the Woods** Large bright orange fruit bodies have a texture reminiscent of chicken. Great in soups and stir-fries. Fruits all season from late spring into late fall. Prefers large-diameter oak logs. (Not available in kits.)

L657A Chicken of the Woods Plug Spawn, bag of 100, $15.00
L657B Chicken of the Woods Plug Spawn, bag of 500, $32.00
657C Chicken of the Woods Sawdust Spawn, $20.00

***Lentinula edodes* Shiitake** Brown umbrella-shaped spongy caps, very nutritious and medicinal. Good for drying and reconstituting in winter soups. Meaty texture when cooked. Grows best on oak and maple. Fruits throughout the growing season and responds well to commercial forced-fruiting production methods. This is the Wide Range Shiitake strain.

L658A Shiitake Plug Spawn, bag of 100, $15.00
L658B Shiitake Plug Spawn, bag of 500, $32.00
658C Shiitake Sawdust Spawn, $20.00
L658D Shiitake Plug Kit, $25.00
658E Shiitake Countertop Kit, $25.00

***Pleurotus citrinopileatus* Golden Oyster** Tropical oyster strain that thrives in warm weather. Produces beautiful clusters with yellow caps that are a favorite at farmers markets. Grows well on many different hardwood species including oak, maple and poplar.

L659A Golden Oyster Plug Spawn, bag of 100, $15.00
L659B Golden Oyster Plug Spawn, bag of 500, $32.00
659C Golden Oyster Sawdust Spawn, $20.00
L659D Golden Oyster Plug Kit, $25.00
659E Golden Oyster Countertop Kit, $25.00

***P. ostreatus* Grey Oyster** Very popular fleshy firm edible grey-white oyster-shaped caps often found growing on old dying maple trees. Our most productive oyster strain. Reliable and cold tolerant, fruits prolifically in early spring or late fall. Grows well on many different hardwood species including oak, maple and poplar.

L660A Grey Oyster Plug Spawn, bag of 100, $15.00
L660B Grey Oyster Plug Spawn, bag of 500, $32.00
660C Grey Oyster Sawdust Spawn, $20.00
L660D Grey Oyster Plug Kit, $25.00
660E Grey Oyster Countertop Kit, $25.00

***P. pulmonarius* Italian Oyster** Clusters of tender brown caps with thick white stems. Considered to be one of the finest culinary oyster mushrooms. Also considered to be medicinal with cardiovascular and cholesterol-controlling benefits. Grows well on many different hardwood species including oak, maple and poplar.

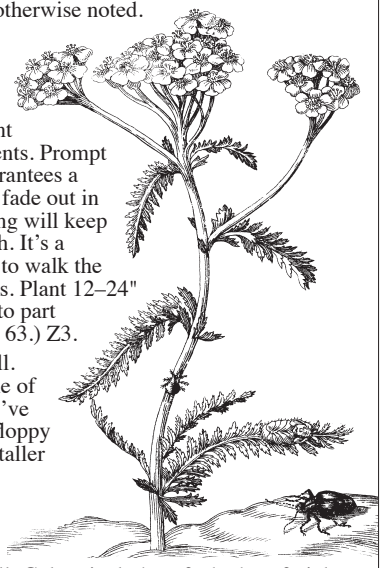
L661A Italian Oyster Plug Spawn, bag of 100, $15.00
L661B Italian Oyster Plug Spawn, bag of 500, $32.00
661C Italian Oyster Sawdust Spawn, $20.00
L661D Italian Oyster Plug Kit, $25.00

***Stropharia rugosoannulata* Wine Cap** Vigorous red-capped fruiting bodies for growing in non-sterile environments such as outdoor sawdust beds, wood chips and straw. Prefers hardwood chips but will grow on a mix of soft and hard. Once established, they will produce for several years and can be easily transplanted to fresh woody debris beds. (Available as sawdust spawn only.)

662C Wine Cap Sawdust Spawn, $20.00

Herbaceous Perennial Plants

USDA hardiness zone (chart on page 71) follows each description.
All our plants are nursery propagated. They are not dug from the wild!
All plant stock is bare root unless otherwise noted.



***Achillea millefolium* Yarrow**
Blooms June through September featuring 2–3" flat-topped flowerheads. Ferny green foliage is aromatic when crushed. Excellent filler for fresh and dried arrangements. Prompt removal of faded flower heads guarantees a long season of blooms. Colors can fade out in extreme humidity but regular cutting will keep the blooms looking bright and fresh. It's a sweet and easy early morning task to walk the yarrow path and cut quick bouquets. Plant 12–24" apart in well-drained soil, full sun to part shade. (For white yarrow, see page 63.) Z3.

***A. m.* 'Oertel's Rose'** 12–15" tall. Deep rose-pink flower clusters. One of the most well-behaved yarrows we've seen in the garden—not messy or floppy in windy weather like some of the taller varieties. (2¼" plug stock)

L675 ***A**: 1 for $4.75*
***B**: 3 for $15.25*
***C**: 6 for $29.00*

***A. m.* 'Summer Pastels'** 24" tall. Colors include soft shades of pink, red, white, yellow, salmon, orange, mauve and lavender. MOFGA-certified organic, grown at Ripley Farm in Dover-Foxcroft. **ME Grown.** (bare-root crowns)

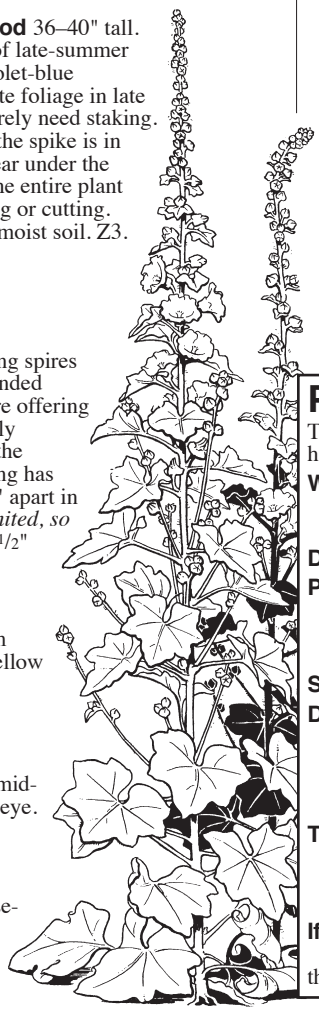
L676 ***A**: 1 for $7.75* ***B**: 3 for $18.25* ***C**: 6 for $32.00*

***A. m.* 'Terra Cotta'** 18–36" tall. Flowerheads start out dusky peachy-apricot with yellow undertones and gradually mature to a stunning coppery-bronze. One of our favorites! (2¼" plug stock)

L677 ***A**: 1 for $4.75* ***B**: 3 for $15.25* ***C**: 6 for $29.00*

***Aconitum napellus* English Monkshood** 36–40" tall. Also called **Friar's Cap**. Produces a mass of late-summer blooms with dense showy spikes of dark violet-blue helmet-shaped flowers above elegant palmate foliage in late summer. Grand delphinium-style blooms rarely need staking. An excellent cutflower—cut when 1/3 to 1/2 the spike is in bloom. I love watching bumblebees disappear under the hood then clamber out covered in pollen. The entire plant is poisonous; wash your hands after handling or cutting. Prefers partial shade. Plant 15–20" apart in moist soil. Z3.

L678 ***A**: 3 for $8.00*
***B**: 6 for $14.00*
***C**: 12 for $24.50*



***Alcea* Hollyhock** 5–6' tall. Classic towering spires covered with disc-shaped blossoms for extended bloom from June to October. This year we're offering all first-year–flowering cultivars that are truly perennial, not biennial like most Alceas on the market. Cut plants back to 12" after flowering has finished to encourage root growth. Plant 12" apart in moist well-drained soil. *Supplies may be limited, so order early to avoid disappointment!* Z3. (3½" plug stock)

***A. ficifolia* 'Las Vegas' Singles Mix**
Remarkable fig-leaved hollyhock displays single flowers in a foxy range of colors from chestnut-brown to red, pink to white, and yellow to copper.

L679 ***A**: 1 for $4.50*
***B**: 3 for $11.75*
***C**: 6 for $22.00*

***A. rosea* 'Black Knight'** A single dusky midnight-purple beauty with a watchful yellow eye.

L680 ***A**: 1 for $4.50*
***B**: 3 for $11.75*
***C**: 6 for $22.00*

***A. rosea* 'Halo Cerise'** Large single cerise-pink flowers with deep purple center halos.

L681 ***A**: 1 for $4.50*
***B**: 3 for $11.75*
***C**: 6 for $22.00*

***Allium* 'Millennium' Flowering Onion** 15–20" tall. A profusion of cute round 2" rosy-purple flowers on sturdy stems above compact upright clumps of strappy glossy green foliage. Sweet-scented blooms make great cutflowers or dried winter arrangements whether you cut them before or after the green seed pods form. Attracts beneficial insects with its sweet nectar yet repels an array of undesirables—slithery, winged and legged pests alike—including deer. Only if crushed will the plants smell like an onion. Adds rugged charm and vertical structure to herb and rock gardens. Z4.

L682 ***A**: 1 for $7.00* ***B**: 3 for $13.00* ***C**: 6 for $23.50*

***Arisaema triphyllum* Jack-in-the-Pulpit** 12–24" tall. In midspring, one or two compound leaves appear close to the ground, each with three leaflets framing an upright stem topped by a striped tannish-purple 3" long cuplike spathe (the pulpit) that contains and arches over the erect greenish-yellow spadix (Jack). It's always a delight to lift the flap and see Jack. This magical Northeastern native prefers dappled shade and moist rich woodland soil. Plant 10–18" apart. Z3.

L683 ***A**: 1 for $7.25* ***B**: 3 for $18.25* ***C**: 6 for $33.00*

***Asarum canadense* Canadian Wild Ginger** 6–12" tall. Heart-shaped leaves up to 7" wide will spread into a beautiful groundcover.

Leaves are large and slightly fuzzy, not small and glossy like the European species. Aromatic roots used like other gingers for their warming qualities and for soothing indigestion, coughs, colds and motion sickness. Grown for roots and foliage. The small reddish-brown urn-shaped flowers grow near the soil surface or in the surface leaf mold, pollinated by crawling insects. Flowers are fun to search for but won't decorate your landscape. Requires shade and moist rich woodland soil. Z3. (2½" plugs in pots)

L684 ***A**: 3 for $18.00*
***B**: 6 for $30.00*
***C**: 12 for $54.00*

***Asclepias incarnata* Swamp Red Milkweed**
5' tall. Native to North America. Forms unique fragrant flat-topped clusters of upturned red-rose–colored flowers. Willow-like leaves are 4–5" long. Clump-forming; great for naturalizing. Attracts bees, butterflies and hummingbirds. Grows naturally in floodplains and wet meadows. Plant 18–36" apart in moist soil. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L685 ***A**: 1 for $9.00*
***B**: 2 for $15.75*
***C**: 3 for $21.50*

Planting Guide for Bare-root Perennials

To receive our guarantee (see page 2) for items on pages 55-66, you must have followed these instructions:

When you receive your order:
- Open the bags and check the plant stock immediately.
- Roots and crowns should be firm and pliable, not soft or brittle.

Do not plant directly outside!

Pot up rootstock in well-drained slightly moist potting mix.
- Small roots need at least a 4" deep x 3.5" diameter pot.
- Medium to large roots need a 6" deep x 6" diameter pot.
- Avoid coiling the roots in the bottom of undersized containers.

Set pots in a protected spot in semi-shade.

During this time you must protect your plants from:
- Freezing
- Drying out
- Too much water
- Long periods of cold and wet conditions

Transplant outside after danger of frost has passed.
- Dig a hole twice the size of the pot.
- Add a little compost to the hole.
- Plant crown-tops just below ground level.

If you cannot pot up your plants immediately upon receipt:
- Store bare-root plant stock in a cool dark (35–40˚) location for no more than one week.

Baptisia australis **Blue False Indigo** 3–4' x same. An early summer stand-out with vibrant blue lupine-like flowers. Native pollinator plant. Nitrogen-fixing legume transfers nitrogen from the air to the soil where it can be absorbed by neighboring plants. Has a bushy habit and shrub-like structure once mature. Seed pods turn black in fall, adding interest to the autumn landscape. Will develop an extensive root system, good for holding slopes to prevent erosion. Plant 3' apart in full sun and well-drained acid soil. Z3.

L686 ***A**: 1 for $8.25* ***B**: 3 for $18.75* ***C**: 6 for $33.00*

Belamcanda chinensis **Blackberry Lily** 24–36" tall. Also called **Leopard Lily.** The official botanical name is *Iris domestica* though no one seems to call it that. Brilliant 1½" orangey-red flowers with maroon spots are held above iris-like fans of deep green foliage. Sturdy clump-forming plants spread by underground rhizomes. Capable of blanketing entire hillsides in optimal growing conditions. Plant 18" apart in consistently moist well-drained soil. Full sun to part shade. Z4.

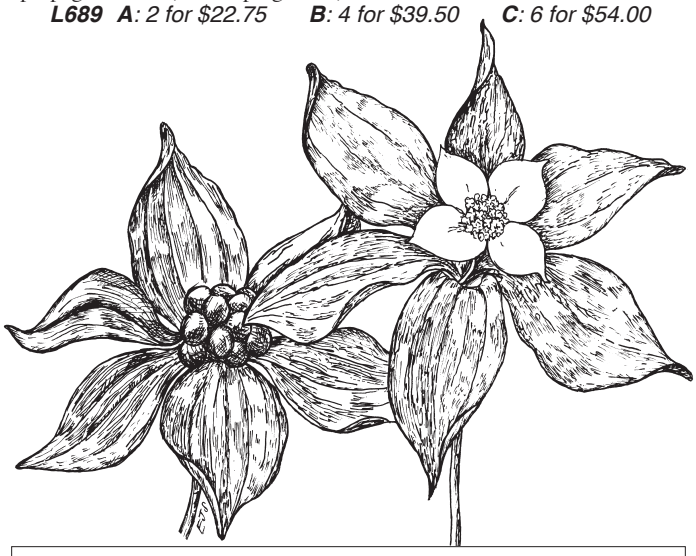
L687 ***A**: 1 for $6.75* ***B**: 3 for $17.25* ***C**: 6 for $31.00*

Chelone obliqua **Turtlehead** 2–3' tall. Boldly veined deep-green leaves topped by elegant spikes of pink hooded flowers that are shaped very much like a turtle's head. Try planting en masse at the mouth of a woodland path. Deer avoid the bitter foliage. Perfect in moist woods or at the water's edge—these pleasing late-season flowers will flourish in a wide range of soils, from clay to sandy, as long as they're not waterlogged. Plant about 12" apart in dappled sunlight. Z4.

L688 ***A**: 1 for $4.75* ***B**: 3 for $15.25* ***C**: 6 for $29.00*

Cornus canadensis **Bunchberry** 3–8" tall. Every year in June I sneak into a secret stand of cedars in the cool woods of Piscataquis County to peek at a magic carpet of wild bunchberries. The dark woods are cast alight with the creamy-white miniature dogwood flowers held above olive-green whorls of six pointy oval leaves. In late summer clusters of edible scarlet berries form and attract songbirds, chipmunks, mice, squirrels and all the other foraging beasts in our great North woods. Best planted en masse in cool damp acidic woodland soil. Nursery propagated. Z2. (2½-3" plug stock)

L689 ***A**: 2 for $22.75* ***B**: 4 for $39.50* ***C**: 6 for $54.00*



Indigenous Royalites

A few years ago, Fedco began to donate a portion of our seed sales of certain varieties—like Hopi Corn and Jacob's Cattle Bean—to Nibezun, a Wabanaki project here in Maine that is working to rematriate Penobscot land and to create dialogue on healing throughout the extended community (nibezun.org/nibezun-project/). Our Indigenous Royalities program is one small way to appreciate and recognize the native breeders and seed keepers of the past whose varieties have endured and continue to sustain us here on Turtle Island.

This year we are extending the program to our Trees catalog by donating royalties from any plant that bears a Native American name. We recognize that Waneta plum, for example, was given a Sioux name by a white person. These plants were likely named without permission. While this practice continues in the nursery trade, it is a not something we embrace. At the same time, we can appreciate a plant as an innocent third party, inherently independent of language and names and holding merit in our landscape.

Long before breeding stations and universities, there were Tree Seed Keepers. Many of our named cultivars likely carry the genetics of the old trees tended long before European arrival. Where you see **Indigenous Royalites** at the end of our description, you will know we are dedicating 10% of our sales of these plants to Nibezun.

Delphinium **New Millennium 'Mini Stars' Mix** 2½' tall. Love the elegant charm of the giant delphiniums but can't give them the space they require in your garden? Dwarf delphiniums have all the stately grace of the giants without all the fuss and falling over! This mix offers sizeable cylindrical terminal flower spikes that rise above knee-high clumps of palmate glossy green foliage. Colors range from purple, blue, mauve, pink, lilac or cream. More tolerant to heat and humidity than many standard cultivars, yet the New Millenniums also thrive in super-chilly corners of the world with reports of successful perennial plantings in the frostier parts of Canada. Avoid overhead watering to prevent disease. Mulch recommended to keep the roots cool and moist. Plant 36" apart in highly fertile non-acid loam. Light shade is best but full sun is fine. Z3. (3½" hardy plug stock)

L690 ***A**: 1 for $6.50*
***B**: 2 for $11.25*
***C**: 3 for $15.25*

Dicentra spectabilis **Old-Fashioned Bleeding Heart** 30–36" tall. Perfectly formed pink heart-shaped flowers with delicate white inner petals dangle like charms on bracelets along graceful racemes above attractive clumps of cut foliage. Blooms early through midspring; goes dormant in summer. Long-lived and beloved.

L692 ***A**: 1 for $6.75*
***B**: 3 for $17.50*
***C**: 6 for $31.50*

Digitalis purpurea **Foxglove** Delightful tubular bell-shaped flowers with veined and spotted throats form along stately spires above basal rosettes of deep green velvet foliage. Flowers June through August. Good for cutting or the naturalized border. A must-have in every cottage garden. This year's offerings are both considered perennial but are best treated as biennials. Spread out the seedlings as they appear and a glorious patch will result in a few years. Plant 12–24" apart in moist slightly acid soil in full sun to part shade. Caution: all parts of the plant are poisonous; wash hands after handling. Z3. (3½" plug stock)

D. p. **'Dalmation Crème'** 16–20" tall. Dreamy creamy butter-yellow flowers with maroon-spotted throats.

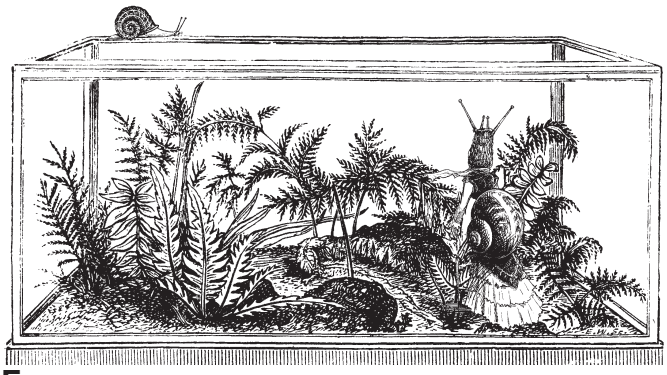
L693 ***A**: 1 for $4.50*
***B**: 3 for $11.75*
***C**: 6 for $22.00*

D. p. **'Dalmation Peach'** 2–3' tall. Elegant peachy-yellow blossoms with orange speckled throats. Soft and subtle beauty.

L694 ***A**: 1 for $4.50*
***B**: 3 for $11.75*
***C**: 6 for $22.00*

D. p. **'Sugar Plum'** 30–36" tall. Pendulous pink flowers with dark purple-speckled throats.

L695 ***A**: 1 for $4.50*
***B**: 3 for $11.75*
***C**: 6 for $22.00*



Ferns are flowerless spore-producing perennials, represented by more than 10,000 species worldwide, ranging from 70' tropical tree ferns to teensy plants sprouting from cracks in alpine rock. In Maine we enjoy lush fern displays all summer on the roadsides and in the woods. Ferns make wonderful low-maintenance foliage plants that thrive in woodsy humus-rich soil and lend a serene aura to a shady garden or landscape. Mulch with 2" of leaves if necessary to keep crowns from drying out.

Adiantum pedatum **Maidenhair Fern** 10–12" tall. Also known as **Eastern Maidenhair Fern**. Delicate whorled form makes it one of my favorites. Glossy black stems curve up and then droop toward the ground with more narrow black stems growing in elegant arches from the main stem. Tiny distinct ginkgo-like green leaves line every stem. Prefers partial shade and slightly alkaline soil. Plant 12" apart. Native to eastern North America. Z2.

L696 ***A**: 2 for $7.50* ***B**: 4 for $12.50* ***C**: 6 for $16.75*

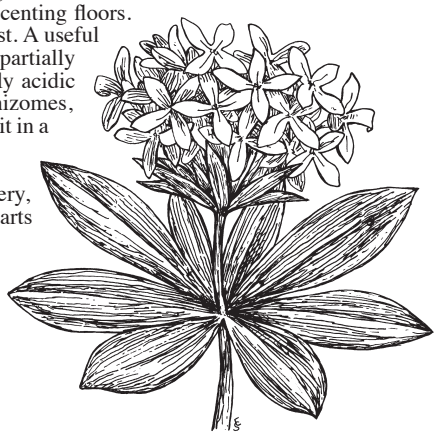
Dryopteris marginalis **Leatherwood Fern** 24" tall. Also known as **Evergreen Wood Fern**. Strong sturdy stems and slightly glossy leathery grey-green fronds make this one of the best ferns for floral arrangements. In late spring it's great fun to look for immature sori (spore cases) on the underside of the frond. Hunt for small green bumps along the margins of the subleaflets. Later in the year, the sori changes color to rusty-brown. Evergreen leaves flourish through the winter and can be found in rocky wooded slopes in Canada, onwards south to Alabama and farther west to the Rocky Mountains. Performs best in less than 3 hours of sunlight per day but will tolerate more if you ask nicely. Plant 12" apart in moist well-drained woodland soil. Z3.

L697 ***A**: 2 for $7.50* ***B**: 4 for $12.50* ***C**: 6 for $16.75*

Osmunda regalis **Royal Fern** Attains giant proportions! Soft and wavy deciduous lance-shaped light green fronds can reach 3' long. Sometimes called **Flowering Fern** because some of the fronds have brown spore cases on their tips that lend a decorative tassel-like appearance. One of the showiest garden ferns makes a great focal point at the waterside or in a woodland. Can reach up to 6' tall and spread to more than 9' wide at maturity. Evolutionarily speaking, *Osmunda* is one of the oldest plant genera, native to North and South America and Asia. Some Royal Fern individuals are said to be 1000 years old. Ours are much younger. Prefers wet boggy areas and part shade. Plant 18" apart in consistently moist soil. Z2.

L698 ***A**: 2 for $7.50* ***B**: 4 for $12.50* ***C**: 6 for $16.75*

Gallium odoratum **Sweet Woodruff** 6" tall. Also called **Master of the Woods**. In late spring tiny white star-shaped flowers appear above compact whorls of fragrant glossy green leaves. Fresh foliage smells like new-mown hay; dried leaves hold a sweet inviting vanilla scent. Traditionally used in Germany to make *Maiwein* or May Wine, a refreshing alcoholic punch drunk in celebration of fertility and the spirits of the forest. In the Middle Ages it was often mixed with oatstraw and hyssop as a strewing mix for scenting floors. Seeds ripen from July to August. A useful and vigorous groundcover for partially shaded moist areas with slightly acidic soil. Spreads by underground rhizomes, so think twice before you plant it in a formal flower border. Best used for edging pathways, as an underplanting in the shrubbery, or for naturalizing the wilder parts of the garden. Z4. (2" plugs)

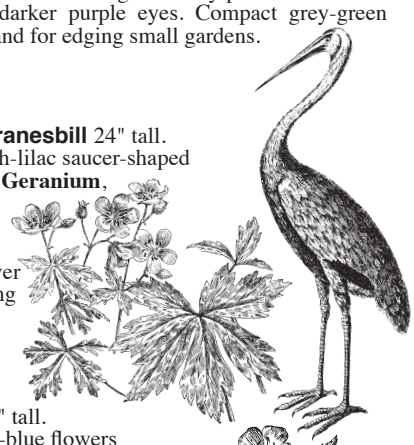


L699 ***A**: 2 for $9.75*
***B**: 4 for $16.75*
***C**: 6 for $22.50*

Geranium **Cranesbill** Vigor, longevity, hardiness, lo-o-ong flowering period and lush attractive deeply cut leaves make this North American native useful for borders, edging, rock gardens or as an orchard companion. After bloom, distinctive long narrow "cransbill" seedpods flutter jauntily above the spreading foliage, which quickly forms dense clumps and turns a rich red in fall. Name confusion may be a big reason why this attractive easy-to-grow genus is not more well known: the popular bedding and indoor plant with big red flowers widely called called geranium is actually *Pelargonium*. For best results plant in the lightly shaded areas of wild open woodland gardens or in the orchard underneath your ancient apple trees. Plant 12–18" apart in average garden soil. Z4.

G. cinereum **'Ballerina'** 6–12" tall. Elegant dainty pink flowers with reddish-purple veining and darker purple eyes. Compact grey-green foliage. Perfect in rock beds and for edging small gardens.

L700 ***A**: 1 for $6.25*
***B**: 2 for $11.00*
***C**: 3 for $14.75*



G. maculatum **Spotted Cranesbill** 24" tall. Clusters of single 1¼" pinkish-lilac saucer-shaped flowers. Also known as **Wild Geranium**, this is the true geranium. Beneficial insect attractor. Native pollinator plant. Low-growing spreading groundcover and the best choice for planting in the orchard.

L701 ***A**: 3 for $7.50*
***B**: 6 for $13.00*
***C**: 12 for $24.00*

G. pratense **'Orion'** 20–24" tall. Clusters of single 1" sapphire-blue flowers with violet veins. Forms a slightly smaller mound than other geraniums we offer. Blooms continuously from late spring through fall, the first big flush of flowers arrives in late May, with a lighter repeat bloom cycle continuing well into autumn. Z4.

L702 ***A**: 1 for $6.25*
***B**: 2 for $11.00*
***C**: 3 for $14.75*

Where Did the Woodland Perennials Go?

We've decided to temporarily discontinue offering goldenseal, trillium, bloodroot and Solomon's seal. It can be difficult to verify that the plants sourced in the nursery trade are seed-propagated in beds, and not dug from the wild. Unlike a lot of the sun-loving perennials of meadows and wetlands, these native woodland plants tend to be slow growing. Many take 1–2 years just to germinate, often with low success rates. After that it takes many more years to reach a size that would survive transplanting. Trillium can take 7 years to reach maturity from the time it germinates, and our beloved ramps can take up to 11 years! We are working to build up a locally grown supply of these plants so we can bring them back to the catalog.

Although some woodland plants may have appeared abundant in the wild, their slow germination and growth habits rarely allow their reproduction to keep up with commercial demand. Many of these plants are now extinct or threatened in their native ranges because of commercial harvesting. By forcing them out of their habitats so we can have them in ours, we are facilitating this extinction. Small plantings have limited genetic diversity and the plants lose the resiliency needed to fend off pests and diseases.

Many woodland plants require very specific conditions and will not thrive in most gardens. It's for this reason Lady's Slipper orchids have so rarely made appearances in the cultivated landscape despite many attempts. The soil and fungal conditions required exist only in the plant's natural forest ecosystem. Woodland plants don't require additional fertility inputs and compost that annuals or some perennials require, but rather depend on leaf decay and mycorrhizal fungi. Growing them requires a basic understanding of their native habitat and reproductive traits.

We have no need to make a small profit off a plant to the detriment of its wild population. Growers selling wild-dug plants undercut the nurseries that put in years of hard work to protect wild populations. If the plants are cheap and abundant, they're not likely to have been propagated at a nursery. The good news is there are small specialty nurseries that source seeds in a way that doesn't harm wild populations of these rare and exquisite plants. Some of our favorites right here in Maine are Fernwood Nursery in Montville, and Rebel Hill Nursery in Liberty.

For tips on starting native perennials from seed, see page 62.

***Helenium autumnale* Red & Gold Sneezeweed Mix** 4–5' tall. Supposedly used for snuff in earlier times, hence the common name. A rich and blazing scheme of bronze, brown, crimson and yellow for a vibrant end-of-summer display. Single flowers resemble coreopsis in shape but have a large center button much like a coneflower. Combine with asters and phlox for great late-season color. Not fussy, easy to grow, excellent cutflower, and at its prime when most perennials are done blooming. Plant 18" apart in full sun. MOFGA-certified organic, grown at Ripley Farm. Z3.

ME Grown.

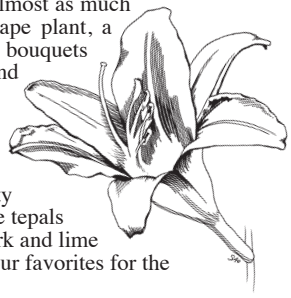
L703 ***A****: 1 for $6.75*
B*: 3 for $17.25*
C*: 6 for $31.00*

"You've made my garden a magical place."
–Heather Highfield, Syracuse, NY

***Hemerocallis* Daylily** Champion low-maintenance perennial produces a bush of narrow arched leaves topped with lily-shaped flowers from July to September. *Hemerocallis* means 'beautiful day,' referring to the fact that each flower lasts only a day, but since each scape (or stem) is covered with buds, bloom periods can be extensive and the long stems work well in bouquets. Trouble-free, chokes out weeds. Flourishes under a wide range of conditions, from full sun to shade, wet to dry. Plant 12–18" apart in average soil; benefits from an annual shovel or two of compost. This year's stock is one-year-old field-grown rootstock with two fans. Z2.

***H.* 'Little Business'** 12–15" tall. Dainty 3" dusky raspberry-red flowers with lime-green throats. Blooms and reblooms almost as much as the famous Stella de Oro! Excellent landscape plant, a vigorous multiplier and looks fabulous paired in bouquets with other small daylilies like Little Grapette and Siloam June Bug. Mid-late season blooms.

L704 ***A****: 1 for $5.50*
B*: 3 for $14.25*
C*: 6 for $25.75*



***H.* 'Little Grapette'** 18" tall. A small and mighty miniature daylily with 2"-wide light grape-purple tepals with a black purple band, a rose-purple watermark and lime green throat. High bud count makes this one of our favorites for the front of the daylily border. Midseason blooms.

L705 ***A****: 1 for $5.50*
B*: 3 for $14.25*
C*: 6 for $25.75*

***H.* 'Mauna Loa'** 22"-tall foliage with stem height reaching 24–40" and higher, depending on your soil. Photos and descriptions cannot capture the glowing aura of these 5" blossoms with fiery-orange centers that glow like active volcanoes. As the lava cools, blossom color shifts to tawny orange with rich russet ruffled edges. A tall and fascinating cultivar. We sold this variety back in 2010 and recently had a flurry of requests to bring it back. Early to midseason blooms.

L706 ***A****: 1 for $5.50* ***B****: 3 for $14.25* ***C****: 6 for $25.75*

***H.* 'Siloam June Bug'** 23" tall. Adorable miniature 2¾" golden-yellow flowers with dark red eye-zones and bright green throats. These little beauties are a joy to have in the garden for midsummer bouquets. Early to midseason blooms.

L707 ***A****: 1 for $6.00*
B*: 3 for $15.50*
C*: 6 for $28.00*

***H.* 'Simmons Overture'** 24" tall. Brighten up your foundation plantings with these giant 6" lavender-rose flowers with dark purple eye-zones, golden-yellow throats, and deep purple wriggly edges. Considered a "super-bloomer" with more than 300 flowers per season after three years in the ground. Throw some of these in with your old orange ditch lilies just to get your nosy neighbors' tongues wagging. Mid-late season blooms.

L708 ***A****: 1 for $6.75*
B*: 2 for $11.50*
C*: 3 for $15.50*

Hosta Bold foliage forms orderly mounds with dependable sprays of fragrant bell-shaped flowers on tall stalks. Valuable and cherished low-maintenance border plant provides shade-loving groundcover from spring to frost. With their varying colors, textures and clump sizes, hostas alone under trees can make a woodland garden. Hostas tolerate a wide range of soil conditions but need moisture. Those with blue and variegated leaves develop their best color in shade. Deep shade gives fewer flowers but better leaf colors. Plant 2–4' apart in rich soil with adequate humus. Divide every 4–5 years, or leave them alone; they will improve with age as they spread and establish. Z3.

***H.* 'Lakeside Paisley Print'** Dramatic design and texture make this hosta a must-have for any collector. Unique heart-shaped leaves with wide wavy green margins. Slender, creamy-white and yellow streaks in the center of the leaf shoot out from the cream petioles in a fabulous feathered Farah Fawcett-style pattern! Lavender flowers on 24" scapes. 12" tall and 30" wide.

L709 ***A****: 1 for $9.50*
B*: 2 for $16.25*
C*: 3 for $21.75*

***H.* 'Velvet Moon'** Bright golden-yellow leaves with striking dark green centers. We searched far and wide for an interesting hosta that grows well in both shade and full sun—we finally found it! A sport of the famous variety Abiqua Moonbeam. Lavender flowers. 24" tall and 36" wide.

L710 ***A****: 1 for $7.50*
B*: 2 for $13.00*
C*: 3 for $17.50*

Humongous Hostas Mix Fulfill your shadiest garden fantasies! We will choose six of the biggest hosta varieties we can get our hands on, all listed as "Giants," in a variety of solid blues, solid greens, dark margins with light centers, and light margins with dark centers. Size matters: will be no shorter than 30" tall and up to 80" wide at maturity. Each plant will be individually bagged and labeled by name.

L711 ***A****: 6 plants for $31.50*

***Iris sibirica* Siberian Iris** In late June, delicate flowers dance above tall slender slate-green foliage that looks good all summer. Tolerates most conditions, but performs best in rich moist acid soil. Plant 18" apart in full sun or partial shade. Give them room to spread, and divide clumps every few years. Z3.

***I. s.* 'Contrast in Styles'** 28–34" tall. Eye-catching 3–5" flowers with deep wine-purple standards and falls, and lighter blue-purple styles. Semi-flared falls display prominent white and yellow signals with purple veining.

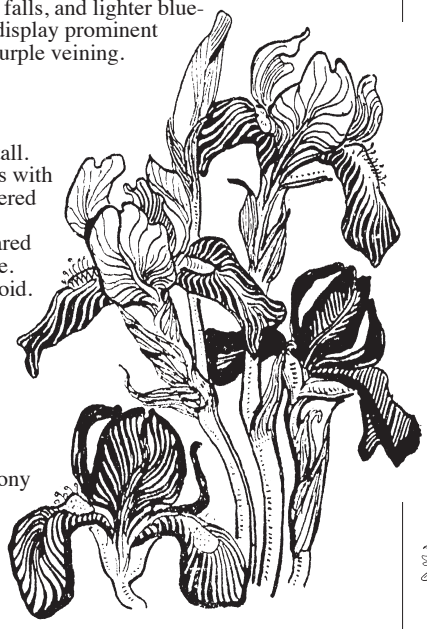
L712 ***A**: 1 for $5.25*
***B**: 3 for $13.25*
***C**: 6 for $23.75*

***I. s.* 'Ruffled Velvet'** 24–30" tall. Exquisite velvety 4½" blossoms with unusual finely cut, fancily feathered dark saturated reddish-purple standards above plum-purple flared falls with a black-and-gold blaze. Vigorous long-blooming tetraploid. One of the best siberians in my garden. Introduced in 1973 by the famous and beloved Currier McEwen.

L713 ***A**: 1 for $5.25*
***B**: 3 for $13.25*
***C**: 6 for $23.75*

***I. s.* 'Sunfisher'** 28" tall. Lemony yellow standards and deeper sunshine-yellow falls.

L714 ***A**: 1 for $7.75*
***B**: 3 for $20.00*
***C**: 6 for $35.75*



***I. versicolor* Northern Blue Flag** 30–36" tall. Northeastern native species carries gorgeous blue-violet flowers with bold purple veining and a white and lemon-yellow blaze. Tall slender blue-green arching lance-shaped leaves offer a strong vertical feature to the landscape. Requires consistently moist soil and prefers 2–4" of shallow standing water. Plant 12–24" apart in full sun to part shade. Early bloom time. Z2.

L715 ***A**: 3 for $10.50*
***B**: 6 for $18.50*
***C**: 12 for $33.00*

***Leucanthemum* x *superbum* 'Crazy Daisy'** 24" tall. Snow-white petals form fluffy double rings around a bright yellow disk. Starts blooming mid-July here in central Maine and with regular cutting will bloom into fall. Excellent choice for cutflowers. One of the easiest perennials to grow. Plant 12–18" apart in full sun to partial shade in well-drained soil. MOFGA-certified organic, grown at Ripley Farm. Z4. **ME Grown.** (bare-root crowns)

L716 ***A**: 1 for $6.75*
***B**: 2 for $12.50*
***C**: 3 for $16.50*

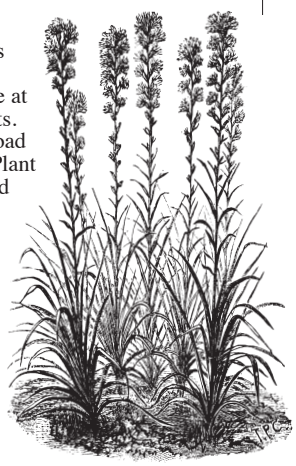
***Liatris spicata* Blazing Star** Also called **Gayfeather**. Stiff dense "bottlebrush" flower spikes tower above fine grass-like foliage. Adds elegant structure to the perennial border and mixed bouquets. For cutflowers be sure to leave at least 1/3 of the stem on each plant for best results. Blooms from July to September. Tolerates a broad range of growing conditions, but not drought. Plant in full sun, 3" deep, 8–12" apart, in well-drained fertile soil. Z3. (1¼–1½" corms)

***L. s.* Floristan White** Dreamy white flower wands grow 30–36" tall.

L717 ***A**: 10 for $2.75*
***B**: 20 for $4.75*
***C**: 50 for $10.00*

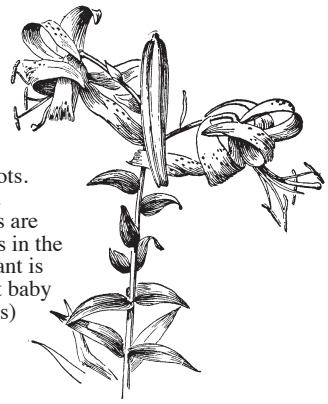
***L. s.* Purple Blazing Star** Magical magenta-purple flower wands grow 20–30" tall.

L718 ***A**: 10 for $2.75*
***B**: 20 for $4.75*
***C**: 50 for $10.00*



***Lilium* Oriental Lily Mix** 30–44" tall. Queen of the perennial border, fabulously showy and surprisingly easy to grow. Colors range from all-pinks, all-whites, to brilliant bicolors with spots and stripes. The five or more varieties in this mix of fragrant Oriental hybrids will draw a crowd to your garden in August. Great as cutflowers, or let them stand in display beds. Excellent as bedding plants or cutflowers, good as specimens or in solid masses. Light shade prolongs summer blooms and keeps the bulbs cool. Plant bulbs 6–8" deep, 6" apart in rich slightly acid well-drained soil. Z3.

L719 ***A**: 3 for $8.75*
***B**: 6 for $15.75*
***C**: 12 for $26.00*



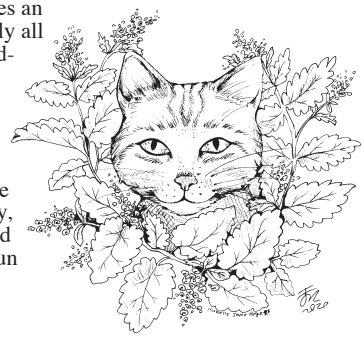
***L. tigrinum* 'Citronelle' Tiger Lily** 2–5' tall. Robust variety produces scads of luminous lemon-yellow flowers with recurved petals generously flecked with dark purple dots. Prominent rusty-red anthers produce a beautiful mahogany pollen. Tiger lilies are distinguished by purplish-black bulbils in the leaf axils along the stem. When the plant is happy, the bulbils will drop and sprout baby lilies by the score. Z2. (1½–1¾" bulbs)

L720 ***A**: 3 for $6.50*
***B**: 6 for $10.50*
***C**: 12 for $20.50*

***Lobelia syphilitica* Great Blue Lobelia** 3–5' tall. In early spring, this gorgeous North American native forms deep green rosettes, which produce tall green stems with alternate lance-shaped leaves. Blue-violet flower spikes appear midsummer. Don't deadhead: healthy plants produce several thousand seeds per stem and require damp open ground to germinate well. Plant along the riverbank and streambed, edges of bog, in the perennial border or in the meadow. Absolutely stunning once established. Best planted in light shade in consistently moist soil, with minimal weed competition the first year. MOFGA-certified organic, grown by Ripley Farm. Z3. **ME Grown.**

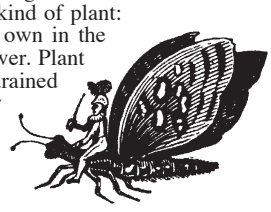
L721 ***A**: 1 for $6.75*
***B**: 2 for $12.50*
***C**: 3 for $16.50*

***Nepeta faassenii* 'Walker's Low' Catmint** 2–3' tall, despite its name. Aromatic grey-green foliage with long arching stems topped by lavender-blue flowers provides an eye-catching show of color nearly all summer. Creates a strong dependable low-growing hedge along any garden path. Flowers attract bees, butterflies, hummingbirds and human admiration. 2007 Perennial Plant of the Year. Cut back in midsummer to encourage steady blooms. Likes hot and dry, but will grow in any well-drained soil. Plant 18–24" apart in full sun to part shade. Z3.



L722 ***A**: 1 for $7.50*
***B**: 2 for $13.00*
***C**: 3 for $17.50*

***Oligoneuron rigidum* Stiff Goldenrod** 2–5' tall. Also called **Rigida**. Formerly classified as a member of the *Solidago* genus and recently reclassified as an *Oligoneuron*. Grower Gene Ripley said it best: "Rigida displays the gorgeous yellow-gold vibrancy of goldenrod, but packed into a dense, showy, flat-topped cluster, with attractive lush slate-green foliage that you'd never recognize as a goldenrod. The pollinators absolutely love it, like all goldenrods, but Rigida draws them in without looking weedy or common. My favorite kind of plant: a native pollinator magnet that holds its own in the garden on looks alone!" Excellent cutflower. Plant in full sun to part shade in rich well-drained soil. MOFGA-certified organic, grown by Ripley Farm. Z3. **ME Grown.**



L723 ***A**: 1 for $6.75*
***B**: 2 for $12.50*
***C**: 3 for $16.50*

***Paeonia* Itoh Peony** Also known as **Intersectional Hybrid Peonies**, these wonders are a cross between herbaceous garden peonies and tree peonies and feature the best of both. Giant 6–9" blossoms (like the ones on tree peonies) open just after the garden peonies have faded. The growth habit is similar to garden peonies with attractive mounded foliage that dies back in the winter. But do not cut Itoh peonies down the ground in the fall—next year's buds need room to develop on the lower stems. Leave at least 6" of hardwood stems above the ground.

Named for Toichi Itoh, the Japanese hybridizer who supposedly made thousands of attempts to cross garden and tree peonies. He finally succeeded in 1948 but did not live to see his seedlings bloom. In the 1970s Toichi's widow gave an American breeder permission to introduce Itoh peonies to the West, where hybridizers took up the intersectional torch.

Full planting and pruning instructions will be included with your order. *Supplies limited—order early to avoid disappointment!* Z3. (Stock has 3–5 eyes.)

***Paeonia* (Itoh) x 'Bartzella'** 30–36" tall. Fragrant 6" semi-double lemon-yellow flower with red flames at the center. Blossoms can display as fully double on occasion.

***L724 A**: 1 for $40.00*

***Paeonia* (Itoh) x 'Julia Rose'** 30–36" tall. Cherry-red buds open to 8" fragrant semi-double orange-apricot-pink flowers with subtle purple edging. Blossoms eventually fade to yellow. All five colors can be seen on one plant at the same time.

***L725 A**: 1 for $47.00*

***Paeonia* (Itoh) x 'Scrumdiddlyumptious'** 30–36" tall. Semi-double 6" blooms are light cream with blush-pink edges.

***L726 A**: 1 for $70.00*

"I'm a garden nerd… with a winter garden in southern Appalachia and a summer garden in upstate New York. In this very trying time for all of us, I just wanted to say that your company has been and will continue to be a integral part of both. From seeds to trees, bulbs, tools and all things garden. I'm a co-op member and proudly suggest Fedco products to anyone who will listen! Please hang in there, I need you to get through this! Just saying… Support not only the farmers but their suppliers as well!!"
–Francis Joseph Laper Jr.

***Paeonia lactiflora* Garden Peony** Also called **Chinese Peony**. Red shoots appear in spring and form a bushy clump, about 3x3', of lustrous dark green deeply lobed foliage. Fat spherical buds on sturdy stems above the foliage gradually open into large beautiful flowers from late spring to early summer. (Ants may help the buds open so don't discourage their presence.) May take 3 to 5 years to establish before, blooming and resents being disturbed or left in a pot for more than one winter. Wait several years until the plants have many stems (therefore many eyes) before dividing. Z3. (Stock has 3–5 eyes, except where noted.)

***P. l.* 'Command Performance'** 30" tall. Fragrant fully double cardinal-red bomb-type blossoms can measure up to 9" across! Some growers claim the massive flowers start out red, change color after a few days to deep orangey-red, with more color variations as the season goes on, hence this beasty beauty's nickname Gobstopper (à la *Charlie and the Chocolate Factory*). We wanted to see for ourselves. Midsummer blooms.

***L727 A**: 1 for $20.00 **B**: 2 for $35.00 **C**: 3 for $47.00*

***P. l.* 'Festiva Maxima'** 3' tall. Introduced in 1851. Heavenly scented large double white flowers with a light crimson drizzle upon the central petals. Early season blooms. 2–3 eyes.

***L728 A**: 1 for $13.00 **B**: 2 for $23.00 **C**: 3 for $31.00*

***P. l.* 'Sarah Bernhardt'** 36" tall. Introduced in 1906. Fragrant flowers open with narrow red lines shot onto light rose-pink. Matures to delicate pink with a slight creamy-silvery edge. Can a pink be both warm and silvery? This one is. One of my favorites with exactly the right amount of doubling—appears richly full but not crammed. Late season blooms.

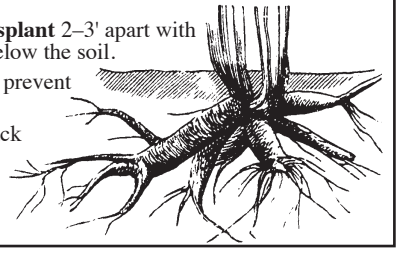
***L729 A**: 1 for $8.75 **B**: 2 for $15.00 **C**: 3 for $20.50*

***P. l.* 'The Fawn'** 32" tall. Introduced sometime between 1922 and 1943. Possibly the most posh peony you will ever set eyes on. Fragrant fully double blossoms feature translucent silky blush-pink petals covered with subtle deeper pink speckles. The overall effect is breathtaking. Sturdy stems not as floppy as most peonies. Late season blooms. Opens just before Sarah Bernhardt and keeps longer in a vase.

***L730 A**: 1 for $23.00 **B**: 2 for $39.50 **C**: 3 for $53.25*

Growing Garden Peonies

- **Peonies prefer:** full sun to part shade, and rich fertile well-drained soil
- **Recommended soil amendments:** compost, bone meal, azomite
- **When you receive your peony rootstock**, pot them up, following the instructions on page 55.
- **After danger of frost, transplant** 2–3' apart with the eyes no more than 1 1/2" below the soil.
- **Peonies require support** to prevent heavy flowers from flopping.
- **Autumn plant care:** Cut back to just above ground level to allow a fresh start in spring. Amend soil with compost around the base of the plant.



***Papaver orientale* Oriental Poppy** Breathtaking clump-forming perennial features finely cut bristly frosty-green leaves and shimmering crepe-paper blossoms that give way to unique signature seedpods that are an essential component in late-season bouquets and dried arrangements. The entire plant goes summer-dormant—don't be alarmed when the leaves turn brown in early summer and disappear almost entirely by August. Basal mats of new leaves will appear in the fall. Oriental poppies form a taproot, so loosen soil deeply before planting so roots can reach the cool soil with ease. Requires full to part sun and neutral well-drained soil. Overwatering, particularly during dormancy, is the most common cause of failure. Winter mulch is recommended to prevent heaving. Z3.

***P. o.* 'Little Patty's Plum'** 20" tall. Dusky damson-plum–colored blossoms. A short version of the original Patty's Plum poppy, a compost-pile surprise discovered in the 1990s by gardener Sandra Pope. Named for plantswoman Patricia Marrow, owner of the famous Kingsdon Nursery in Somerset, England.

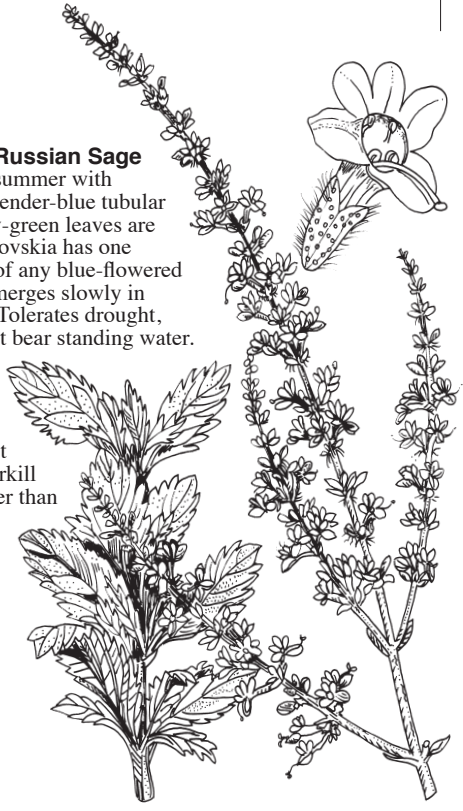
L731 ***A**: 1 for $6.50*
***B**: 2 for $11.00*
***C**: 3 for $14.75*

***P. o.* 'Turkenlouis'** 24–36" tall. A fiery sunburst of orangey-red fringed and ruffled blossoms.

L732 ***A**: 1 for $6.50*
***B**: 2 for $11.00*
***C**: 3 for $14.75*

***Penstemon digitalis* Foxglove Beardtongue** 3' tall. Beckon the birds and bees to your garden with these white to light pink spires covered with nodding tubular bell-shaped flowers. Plant 8–14" apart in full sun to part shade in fertile medium-dry well-drained soil. Will self sow and develop a nice stand over time. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

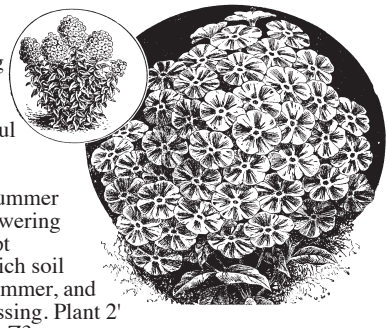
L733 ***A**: 1 for $6.75*
***B**: 2 for $12.50*
***C**: 3 for $16.50*



***Perovskia atriplicifolia* Russian Sage** 36–48" tall. Blooms in midsummer with elegant slender spires of lavender-blue tubular flowers. Finely divided grey-green leaves are aromatic when crushed. Perovskia has one of the longest bloom times of any blue-flowered plant. Semi-woody shrub emerges slowly in spring; cut back after frost. Tolerates drought, loves heat and full sun, can't bear standing water. Likes to spread out once it gets established and it is so beautiful it deserves every foot of space it can get! Plant 24–36" apart. I suspect that Zone 4 reports of winterkill are from poor drainage rather than cold, so a cautious Z4.

L734 ***A**: 1 for $7.50*
***B**: 3 for $19.00*
***C**: 6 for $34.25*

***Phlox* Garden Phlox** Large spreading clusters of fragrant showy long-blooming flowers in mid to late summer will accent your border or naturalized area with wonderful color and fragrance. Attracts butterflies and hummingbirds. Essential component of late-summer wedding bouquets. Extend flowering season by watering and prompt deadheading. Prefers humus-rich soil that stays cool and moist in summer, and benefits from regular side-dressing. Plant 2' apart, full sun to partial shade. Z3.



***P. amplifolia* 'Goliath'** 26–30" tall. Giant fragrant lilac-purple flowers with starry white spokes and dark eyes. The flower heads are twice the size of any phlox we've seen!

L735 ***A**: 1 for $6.50* ***B**: 2 for $11.00* ***C**: 3 for $14.25*

***P. a.* 'Hercules'** 26–30" tall. Giant fragrant light pink flowers with subtle starry white spokes and darker eyes. In the land of Phlox, Hercules is Goliath's brother and his blossoms are just as big!

L736 ***A**: 1 for $7.50* ***B**: 2 for $13.25* ***C**: 3 for $17.75*

***P. paniculata* 'Red Riding Hood'** 18–24" tall. A compact variety with large fragrant cherry-red flowers.

L737 ***A**: 1 for $7.50* ***B**: 2 for $13.25* ***C**: 3 for $17.75*

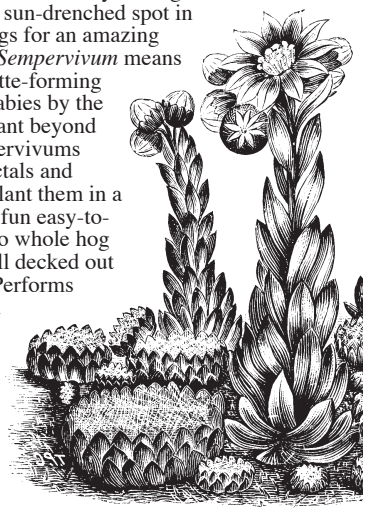
***Pulmonaria* 'Mrs. Moon' Lungwort** 9–12" tall and eventually up to 2' wide. Brighten up your shade garden with this bold-textured woodland perennial. Periwinkle-blue buds open to charming pink flowers, creating a striking effect with both colors appearing at once on the same plant. Large ovate slate-green leaves are dressed in vivid silver-white splotches. Presents a brilliant early season contrast to blooming daffodils and emerging hostas and ferns. Plant 1–2' apart in moist soil and full to partial shade. Z3.

L738 ***A**: 1 for $4.00*
***B**: 3 for $10.00*
***C**: 6 for $17.50*

***Pulsatilla vulgaris* 'Rubra' Pasque Flower** Up to 12" tall. Also known as **Wind Flower**. Frosty-green fuzzy flower stems often emerge when patches of snow are still on the ground. Soon after, large open bell-shaped dusky burgundy flowers with golden-yellow stamens bloom as the finely cut furry ferny foliage begins to form. At bloom time flower stems are typically 4–5" tall but continue to grow after blooms have passed, eventually reaching heights of 9–12", with unique spherical clusters of feathery silvery seedheads. Excellent choice for rock gardens and the front of the border. With proper care it will develop a deep extensive root system. Plant 10" apart in full sun to part shade in rich seriously well-drained soil. Prefers not to be disturbed once established. Z4. (3½" plug stock)

L739 ***A**: 1 for $4.00*
***B**: 3 for $10.00*
***C**: 6 for $17.50*

***Sempervivum* Hens and Chicks Mix** If you've got boulders in the back forty or a rocky sandy sun-drenched spot in the dooryard, you have the makings for an amazing cascading Sempervivum display. *Sempervivum* means 'always alive.' Low-growing rosette-forming succulents produce runners and babies by the boatload. Drought- and heat-tolerant beyond belief, and cold-hardy, too! Sempervivums offer a fun way to learn about fractals and how our world works—you can plant them in a strawberry pot with the kids for a fun easy-to-care for botany/math project, or go whole hog and build a mini-boulder palace all decked out in Hens and Chicks and mosses. Performs best in super-drained gravelly soil with lots of sun and dappled shade. We're offering a mix of varieties including reds, greens and purples. Z3. (2½" pots)



L741 ***A**: 1 for $4.00*
***B**: 3 for $9.00*
***C**: 6 for $15.50*

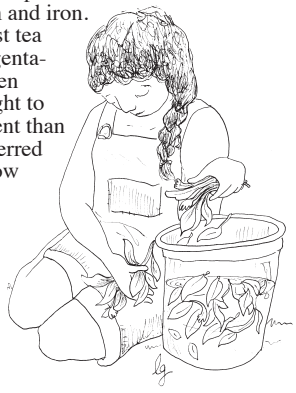
***Senna hebecarpa* Wild Senna** 4–6' tall. Also called **Partridge Tree**. Little canary-yellow flowers form dense clusters above attractive compound pea-like foliage. According to the USDA, it is not yet known if this leguminous North American native fixes atmospheric nitrogen, as so many legumes do. We do know it attracts butterflies and bees and provides food for hungry wildlife. Develops long slender dark-brown seedpods, beloved by birds. Plant a hedge of this stately sun-loving plant in the wild meadow—the seed pods burst when ripe, attracting partridge, turkeys and the like. Plant 2' apart in moist to wet soil. Full sun. Thrives in clay soils but will tolerate sandy or loamy ground. MOFGA-certified organic, grown by Ripley Farm. Z4. **ME Grown.**

L742 ***A**: 1 for $7.25*
***B**: 2 for $12.75*
***C**: 3 for $17.25*

***Symphyotrichum novae-angliae* New England Aster** Grand heights of 4–6' tall! North American native with freely branching sprays of brightly colored flowers decorate the autumn landscape throughout the Northeast. Colors range from blue-purple to lavender-pink with yellow eyes. Asters add hardy grace to the back of the wild border and will naturalize on banks or in the meadow. Cut back slightly in early to mid June to induce an abundance of 1½–2" rayed blooms from late August into October. Deer usually don't eat them. Provides a late-season source of nectar for hungry pollinators. Plant 12–18" apart in light moist humusy soil in full sun with good air circulation. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L743 ***A**: 1 for $6.75*
***B**: 3 for $17.25*
***C**: 6 for $31.00*

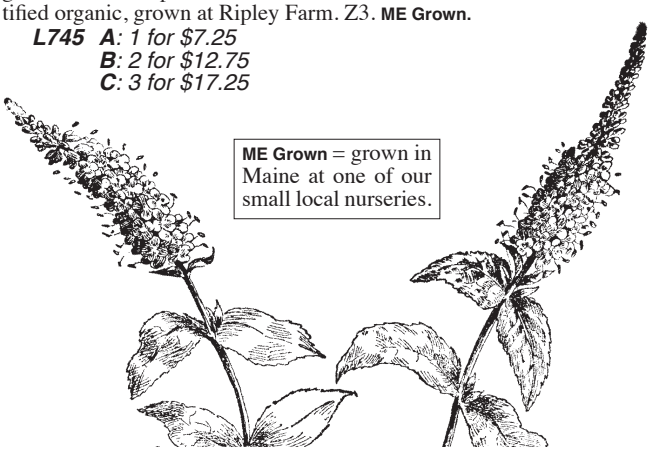
***Symphytum* x *uplandicum* 'Bocking 14' Russian Comfrey** 24–48" tall. Highly recommended as a companion plant for orchards. Makes an excellent addition to the compost pile as it is rich in silica, nitrogen, magnesium, calcium, potassium and iron. Use as mulch or turn the leaf into compost tea for your garden. Clusters of bell-like magenta-purple flowers dangle above the deep green bristled foliage. Russian comfrey is thought to have a higher pyrrolizidine alkaloid content than the species. *S. officinale* (page 65) is preferred for making herbal medicines. Easy-to-grow vigorous plant demands space and if the roots are disturbed *can be very invasive; be careful where you plant it and control with regular harvest*. Plant 24" apart in well-drained soil, sun or shade. MOFGA-certified organic. Grown at Ripley Farm. Z3. **ME Grown.**



L744 ***A**: 1 for $7.25*
***B**: 2 for $12.75*
***C**: 3 for $17.25*

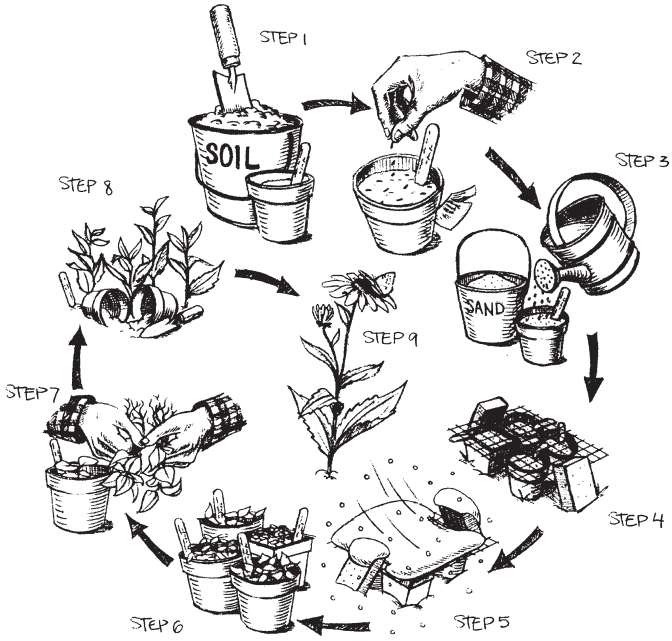
***Veronicastrum virginicum* Culver's Root** 4–6' tall. Elegant towering North American native sends up large 9" flower spikes with densely clustered tiny white blossoms that open from the top down in early summer. Lance-shaped leaves form whorls on rugged upright stems that rarely need staking. Bees love this flower. Adds beautiful architecture to the back of the perennial border and is a requirement in any well-built rain garden. Plant 2' apart in full sun, in wet well-drained soil. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L745 ***A**: 1 for $7.25*
***B**: 2 for $12.75*
***C**: 3 for $17.25*



ME Grown = grown in Maine at one of our small local nurseries.

AUTUMN & WINTER SEED SOWING IN NINE EASY STEPS



INGREDIENTS

SEEDS • POTS • PENCIL • LABELS • SOIL • SAND • WATERING CAN • SCREEN

1. Fill pots and pack the soil to ½ from rim. Label with name and date.
2. Sow the seeds thickly but evenly on the surface of the soil (⅛ – ¼" apart).
3. Cover the seeds with sand to the depth of the thickness of the seed and water.
4. Place pots outside in a shady level location and cover with wire mesh.
5. Rain, snow, sleet, a mid-winter thaw, ice...the seeds will be fine.
6. Begin checking for germination in early spring and water regularly.
7. When pots become crowded, divide into clumps of 3-7 seedlings and repot.
8. In September, plant in garden and water.
9. Look for flowers the following summer, and for many years to come.

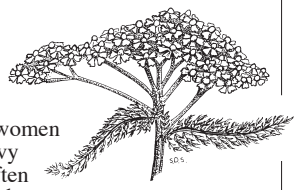
learn more about germinating native seeds at www.wildseedproject.net

Wild Seed Project
RETURNING NATIVE PLANTS TO THE MAINE LANDSCAPE

Herbaceous Medicinals

The following plants have long histories of traditional medicinal use. It's up to you to educate yourself about the safety and efficacy of using plants for medicinal purposes. The statements in our catalog regarding traditional medicinal uses of plants have not been evaluated by the FDA. The plants we sell are not intended to diagnose, treat, cure, or prevent any disease.

Plants may take a year or more to establish before they flower; roots often take several years to reach harvestable maturity. The organic listings are all certified by MOFGA.



***Achillea millefolium* Yarrow** 24" tall. Named for its use by Achilles to staunch battle wounds, has a centuries-old tradition of use as an external styptic. A natural anti-inflammatory, yarrow has been used by women to regulate the menstrual cycle, reducing heavy bleeding and easing period pain. Yarrow is often used in combination with other herbs as a cold remedy and to reduce fever. Infusion of flowering tops stimulates healthy digestion and improves circulation. White flat-topped flower clusters bloom June through September. Excellent orchard companion and beautiful addition to the perennial border, meadow, herb or moon garden. Plant 18–24" apart in full sun and well-drained soil. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

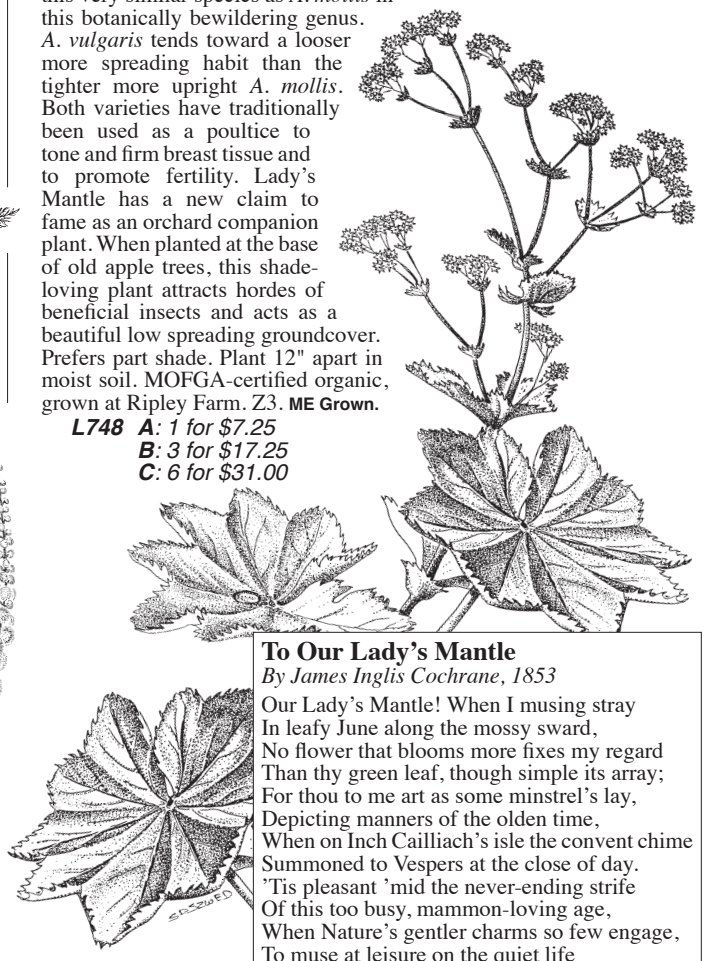
L746 ***A****: 1 for $7.25*
B*: 2 for $12.75*
C*: 3 for $17.25*

***Actaea racemosa* Black Cohosh** 6–10' tall. Also known as **Black Snakeroot** or **Fairy Candles**; formerly known as *Cimicifuga racemosa*. This North American native provides the ultimate backdrop for the lightly shaded woodland garden. From late July into August, long arching racemes of creamy white and gold serpentine flower spikes soar over a 3–4' mound of fine-textured green compound foliage. Diuretic and anti-inflammatory. Anti-spasmodic for cramps, pains, cramped nerves and emotions, included in many premenstrual and perimenopausal formulas. Roots contain salicylic acid. Pregnant women avoid. Prefers part shade, but tolerates full sun in deep moist soil. Grows well in wet spots. Develops large clumps of rootstock so give it room to spread. Plant 3' apart in rich moist soil, part sun, part shade. Our stock is sustainably grown by Joanna Linden at Shooting Star Farm in Canaan. Z3. **ME Grown.**

L747 ***A****: 1 for $8.50* ***B****: 2 for $14.75* ***C****: 3 for $20.00*

***Alchemilla mollis* Lady's Mantle** 12–18" tall. Enchanting tiny fans of leaves emerge in early spring and unfold into a mound of rounded fan-creased silvery grey-green foliage. Sprays of tiny yellow-green stars bloom on 15" tall stalks above the foliage. Most herbals list the medicinal variety as *A. vulgaris*; ornamental growers list this very similar species as *A. mollis* in this botanically bewildering genus. *A. vulgaris* tends toward a looser more spreading habit than the tighter more upright *A. mollis*. Both varieties have traditionally been used as a poultice to tone and firm breast tissue and to promote fertility. Lady's Mantle has a new claim to fame as an orchard companion plant. When planted at the base of old apple trees, this shade-loving plant attracts hordes of beneficial insects and acts as a beautiful low spreading groundcover. Prefers part shade. Plant 12" apart in moist soil. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L748 ***A****: 1 for $7.25*
B*: 3 for $17.25*
C*: 6 for $31.00*



To Our Lady's Mantle

By James Inglis Cochrane, 1853

Our Lady's Mantle! When I musing stray
In leafy June along the mossy sward,
No flower that blooms more fixes my regard
Than thy green leaf, though simple its array;
For thou to me art as some minstrel's lay,
Depicting manners of the olden time,
When on Inch Cailliach's isle the convent chime
Summoned to Vespers at the close of day.
'Tis pleasant 'mid the never-ending strife
Of this too busy, mammon-loving age,
When Nature's gentler charms so few engage,
To muse at leisure on the quiet life
Of earlier days, when every humble flower
Was known to all, and cherished as a dower.

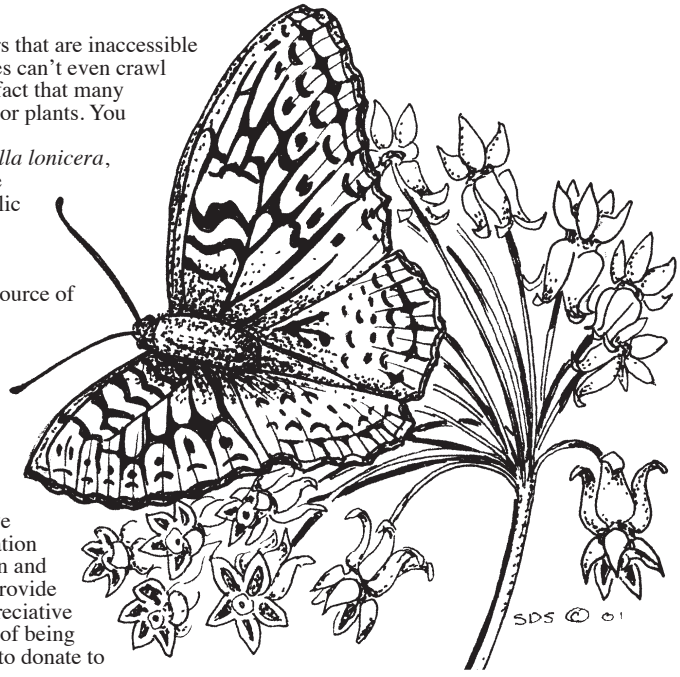
Native Plants & The Wild Seed Project

The hybridization of native plants has lead to an increasing number of flowers that are inaccessible to pollinators. Many double-flowered cultivars have become so frilly that bees can't even crawl into them to access pollen. Bees need unadorned single flowers. Despite the fact that many hybrids are no longer attractive to bees, they're often still branded as pollinator plants. You won't find any hybrid coneflowers here!

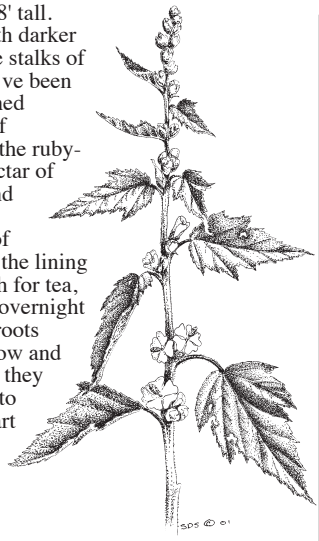
One hybrid gone wrong is that of the Northern Bush Honeysuckle, *Diervilla lonicera*, a vital host plant for five species of caterpillars. Heather McCargo, Executive Director of the Wild Seed Project, gave a fascinating talk at the Portland Public Library in which she described how recent introductions of Diervilla hybrids with red foliage actually deter the insects that depend on them. Plants have developed red foliage as an evolutionary trait to fend off defoliating insects, making red cultivars unappealing to native caterpillars and thus no longer a source of food. We're offering the straight species on page 42.

If you're planting for insects and birds, avoid native ornamental hybrids. Some can be fun to throw in here and there, but they're just for humans. The garden is an opportunity to create space where natural processes can occur. Microorganisms exist in the duff, so allow leaf mulch to build up. Accept that sometimes insects are going to defoliate our favorite plants. Not all caterpillars are pests!

The Maine-based non-profit **Wild Seed Project** (wildseedproject.net) is a great place to learn about growing native plants from seed and incorporating them into the landscape. Wild Seed Project works to increase the use of native plants in all settings in order to conserve biodiversity, encourage plant adaptation in the face of climate change, safeguard wildlife habitat and create pollination and migration corridors for insects and birds. As a small cooperative seeking to provide ethically sourced plants to our customers, we at Fedco have been deeply appreciative of guidance from Wild Seed in helping us determine which plants are at-risk of being pillaged in the wild. If you want to support this important work, you can opt to donate to Wild Seed Project when you order from us.

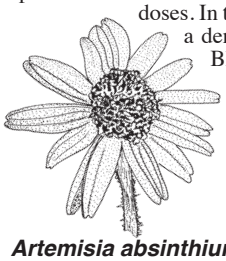


***Althaea officinalis* Marshmallow** 5–8' tall. Small delicate lavender-white flowers with darker lavender stamens appear up and down the stalks of this beautiful towering medicinal plant. I've been drawn to marshmallow ever since I watched herbalist Deb Soule rub its soft velvet leaf against her cheek and explain how much the ruby-throated hummingbird appreciates the nectar of marshmallow flowers. The leaf, flower and mucilagenous roots are traditionally used to soothe the mucous membrane linings of the lungs and digestive tract, and to calm the lining of the urinary tract. Leaf is best used fresh for tea, and the dried roots are best when soaked overnight in cool water for tea. Harvest 4-year-old roots for medicinal use. Wonderful in a hedgerow and magnificent planted with black cohosh as they often blossom together in late July and into August. Readily self-sows. Plant 1–2' apart in light moist soil, part sun, part shade. MOFGA-certified organic, grown at Ripley Farm. Z4. **ME Grown.**



L749 ***A****: 1 for $9.00*
B*: 2 for $15.75*
C*: 3 for $21.50*

Arnica chamissonis Low spreading native groundcover with bright yellow daisy-like flowers used externally in oils and salves to treat bruises, sprains and inflammation. Never take internally except in homeopathic doses. In the right conditions a few plants will develop into a dense long-lived patch. Beneficial insect attractor. Blooms in July. Grows successfully in our climate and is a generally accepted medicinal substitute for *A. montana*. Plant in full sun 1' apart in moist well-drained soil. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

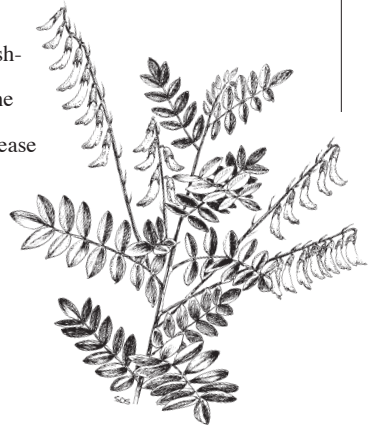


L750 ***A****: 1 for $7.25*
B*: 2 for $12.75*
C*: 3 for $17.25*

***Artemisia absinthium* Wormwood** 3' tall. Aromatic bitter herb native to Europe. Beautiful branching shrub-like woody plant with tall stiff stems and alternate finely cut silvery-grey-green leaves covered with silken white hairs. Useful as an orchard companion—foliage has a strong sage-like scent and acts as an aromatic pest confuser. Adds a frosty color to the back of a perennial border. Traditionally used as a digestive stimulant, mild antidepressant, potent insect repellent, and treatment for intestinal parasites. Notorious as the source of absinthe, an addictive and controversial drink, wildly popular in the 19th c. Legal contention swirls around the thujone content in drinks and herbal preparations flavored with wormwood essential oil, which is known to be safe only in minute doses and potentially toxic in excess. Deadhead to prevent unwanted self-seeding. Thrives in full sun and poor dry soils. Plant 24–36" apart. Requires excellent drainage. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L751 ***A****: 1 for $7.25*
B*: 2 for $12.75*
C*: 3 for $17.25*

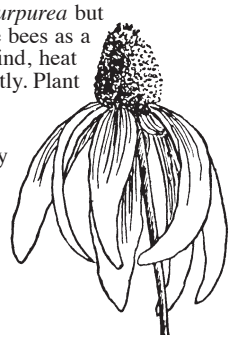
Astragalus membranaceus* Chinese Milk Vetch** 18–36" tall. Important Chinese medicinal known as ***huang qi. Deep-rooted leguminous plant forms an upright bush with many stems, each thickly covered with tiny pinnate leaves and small arching racemes bearing rows of whitish-yellow flowers. When used over many months, is known to rebuild the immune system while combating exhaustion. Long-term tonic use is believed to increase stamina and improve resistance to cold temperatures. Harvest 4- to 6-year-old roots in fall. Plant in full sun, 12" apart in deep gravelly well-drained soil. MOFGA-certified organic, grown at Ripley Farm. Z4. **ME Grown.**



L752 ***A****: 1 for $8.50*
B*: 2 for $14.50*
C*: 3 for $19.75*

Echinacea 3–5' tall. North American native plant often over-harvested in the wild and in need of active cultivation in our gardens. Tolerates wind, heat and drought once established. Will reseed abundantly. Plant 20–30" apart in full sun and light sandy soil. Medicinal benefits vary amongst the different species. *E. purpurea* and *angustifolia* are considered the standard for making medicinal tincture. *E. paradoxa* does share some of the same immune-stimulating compounds as *purpurea* but in our opinion is best planted for the birds and the bees as a complement to your *purpurea* patch. Tolerates wind, heat and drought once established. Will reseed abundantly. Plant 20–30" apart in full sun and light sandy soil. Z3.

***E. paradoxa* Yellow Coneflower** Bright pure-yellow flowers with drooping petals surround spiky dark brown seed cones—irresistible to gobbling goldfinches! Native to the Ozark Mountains and surrounding areas. MOFGA-certified organic, grown at Ripley Farm. **ME Grown.**



L753 ***A****: 1 for $7.75*
B*: 2 for $13.25*
C*: 3 for $18.00*

***E. purpurea* Purple Coneflower** *Echinos* means 'spiny' and the coneflower's spiny seedheads are a beautiful coppery yellow-brown, surrounded by a single row of reflexed lavender-purple petals. Attracts butterflies and other beneficial insects. Tincture the roots of 3-year-old plants for a remedy that gives an immediate boost to the immune system; use it when you feel a cold or flu coming on. Sustainably grown at Shooting Star Farm. **ME Grown.**

L754 ***A****: 1 for $7.75*
B*: 2 for $13.25*
C*: 3 for $18.00*

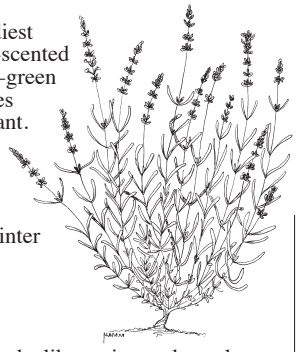
***Eupatorium perfoliatum* Boneset** 5–7' tall. Also called **Thoroughwort**. Majestic North American native with flat-topped clusters of creamy-white to milky-lavender flowerheads atop fuzzy upright stems with deeply veined dark green diamond-shaped perfoliate leaves. Traditionally used to alleviate the symptoms of "breakbone fever," a highly infectious disease known to cause extreme fever and aching pain that travels deep into the bones—hence the name boneset. Tincture of the flowering tops and leaves induces sweating, stimulates the immune system and acts as a mild anti-inflammatory. North American Indians and early colonial settlers administered boneset tea during flu epidemics, and its common use continued well into the 20th c. Peak bloom is mid to late August, providing a generous late-season supply of nectar for adult butterflies and other pollinating insects. Boneset is a practical and fetching addition to the wilder part of the orchard and perennial border. Plant 3' apart in moist soil and full sun to dappled shade. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L755 ***A****: 1 for $7.75*
B*: 2 for $13.25*
C*: 3 for $18.00*

***Glycyrrhiza glabra* Licorice** 3–4' tall. Sweet and soothing roots are used to revitalize adrenal glands, treat colds and bronchitis, reduce throat irritation, yet act as an expectorant and anti-spasmodic. Adds sweetness, harmony and palatability to nearly every herbal combination. *Culpeper's Complete Herbal* from 1653 advises that "by many years continuance in a place without removing…will bring forth flowers, many standing together spike fashion, one above another upon the stalk, of the form of pease blossoms, but of a very pale blue colour." Leguminous plant fixes nitrogen. Give it lots of room and keep it weeded so it can create the roots and runners you want. Roots penetrate deeply and take complete possession of the soil. Runners sometimes travel great distances before sending up a shoot—if the soil is loose you can pull up errant runners, coiling them like rope to hang in wreaths above the woodstove, convenient for winter teas. You can interplant small vegetables like onions, lettuce and beans during the first and second years of growth as licorice fills in. Plant 24–36" apart in sandy well-drained soil. Full sun. Mulch to prevent heaving. Roots attain harvestable size in 3 to 4 years. MOFGA-certified organic, grown at Ripley Farm. Z4. **ME Grown.**

L756 ***A****: 1 for $7.25* ***B****: 2 for $12.75* ***C****: 3 for $17.25*

***Lavandula angustifolia* 'Munstead' Lavender** 16–18" tall. Considered the hardiest lavender with light lavender flowers. Sweet-scented flower spikes extend above aromatic silvery-green lanceolate leaves. Blooms all summer. Makes a nice border, rockery, slope or specimen plant. Compact habit lends itself to edging walkways. Traditionally used to calm nervous excitability and relieve muscle tension. Plant 12–24" apart in full sun, in moist well-drained soil. Mulch to prevent winter heaving. Z4.



L757 ***A**: 1 for $8.50*
***B**: 2 for $14.50*
***C**: 3 for $19.75*

***Levisticum officinale* Lovage** 6' tall. Looks like a giant celery plant with toothed compound leaves, greenish-yellow umbelliferous flowers and small oval seeds. A dramatic architectural element for an edible border; attracts beneficial insects. Glossy green leaves have a strong celery taste and can be used to flavor soups, stews and casseroles. Crush seeds and add to bread and pastries; candy the stems and roots into a sweet medicinal syrup that is said to restore the appetite and revive the love of life. Second-year plants are best for drying. Formerly used to mask the bitter herbs in medicinal concoctions. Pregnant women avoid. Plant 24–36" apart in full sun to part shade in rich moist well-drained soil. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L758 ***A**: 1 for $6.50* ***B**: 2 for $11.25* ***C**: 3 for $15.25*

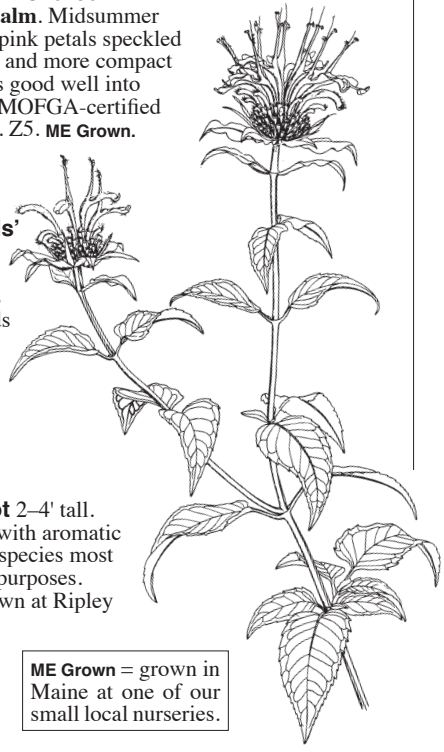
***Mentha piperita* Chocolate Mint** 18–24" tall. Our favorite mint! Bright sweet refreshing peppermint-patty flavor is a must-have for any winter dried-herb supply. Freshen your breath, settle your stomach, brighten up fruit desserts, garnish ice cream, flavor your favorite meat dish, or scent soaps and salves. In a healthier turn of events, we grew chocolate mint to enjoy during our tea breaks and to add to our communal hot cocoa pot. Harvest the leaves before it goes to flower. As with any mint, plant it where you want it forever. Plant in full sun in any decent garden soil. MOFGA-certified organic, grown at Ripley Farm. Some say Z5, although many of us have unstoppable patches in Z4. **ME Grown.**

L759 ***A**: 1 for $6.50* ***B**: 2 for $11.25* ***C**: 3 for $15.25*

***Monarda* Bee Balm** Also called **Bergamot** or **Oswego Tea**. Beloved by bees, butterflies and one of the best hummingbird magnets nature has to offer! Wild and wily flowers form with tubular petals on pincushion heads borne above colorful bracts in July and August. Aromatic foliage. Good for borders, for wet areas and for cutting. Infusion of the aerial parts can be used to improve digestion by reducing flatulence. Delicious used as tea or added to meat and bean dishes. Plant 16–20" apart in light shade in moist soil. Thrives in full sun if given adequate moisture or mulched with leaf mold; tolerates most conditions.

***M. bradburnia* 'Bradbury's Monarda'** 2' tall. Also called **Bradbury's Bee Balm**. Midsummer blooms display whorls of pale pink petals speckled with dark purple spots. Shorter and more compact than *M. fistulosa*. Foliage looks good well into autumn here in central Maine. MOFGA-certified organic, grown at Ripley Farm. Z5. **ME Grown.**

L760 ***A**: 1 for $7.25*
***B**: 3 for $18.25*
***C**: 6 for $33.00*



***M. didyma* 'Panorama Reds'** 3–4' tall. Fabulous blooms in a diverse range of red shades destined to attract scads of butterflies and hummingbirds for your cats and kids to chase in vain. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L761 ***A**: 1 for $7.25*
***B**: 3 for $18.25*
***C**: 6 for $33.00*

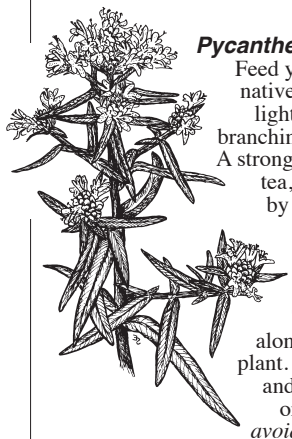
***M. fistulosa* Wild Bergamot** 2–4' tall. Our native wildflower species with aromatic lavender blossoms. This is the species most commonly used for medicinal purposes. MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

L762 ***A**: 1 for $7.25*
***B**: 3 for $18.25*
***C**: 6 for $33.00*

ME Grown = grown in Maine at one of our small local nurseries.

***M. punctata* Dotted Horsemint** 2–4' tall. Also called **Spotted Bee Balm**. Peculiar fragrant double-decker blossoms display multiple colors of pinkish-purple, greenish-beige and maroon, embellished with tiny burgundy spots. The actual flower heads are relatively small but stacked up on the stem and held by bracts that resemble petals. Native to the eastern U.S., from Vermont south to Florida and west into Texas. Drought tolerant, but blooms better with consistently moist soil. Plant in full to part sun in sandy soil. Z3. (4" plug stock)

L763 ***A**: 1 for $7.25*
***B**: 3 for $18.25*
***C**: 6 for $33.00*



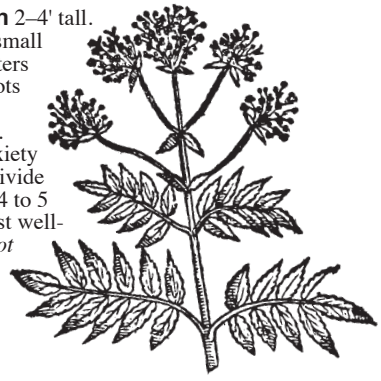
***Pycanthemum virginianum* Mountain Mint** 30" tall. Feed your local pollinators with this densely flowered native. Blossoms, from July into August, are white to light lavender with tiny purple spots. Wispy upright branching foliage smells intensely minty when crushed. A strong infusion of the aerial parts makes a tasty minty tea, traditionally used to settle indigestion. Spreads by shallow underground rhizomes and will ramble around if you let it, so choose planting location wisely! Prefers moist soil and will do well in full sun to part shade. Once established, it will grow well in a wide range of soils. Tolerates clay, heat and drought. Try growing it along the woodland edge—deer are not fond of this plant. Native to eastern U.S. from Maine to Michigan and south to Georgia and Texas. MOFGA-certified organic, grown at Ripley Farm. *Pregnant women avoid*. Z4. **ME Grown.**

L764 ***A**: 1 for $7.25*
***B**: 2 for $12.75*
***C**: 3 for $17.25*

***Symphytum officinale* Comfrey** 24–48" tall. Also called **Knitbone**. Clusters of bell-like pinkish purple flowers dangle above the deep green bristled foliage. Highly recommended as an orchard companion. Well known for its skin-soothing properties. Contains allantoin, promotes healing of skin and bone; also demulcent for lung and throat. Research on comfrey is inconclusive, but most agree that this species is the one to use medicinally. Easy-to-grow vigorous plant *can be invasive;* be careful where you plant it and control with regular harvest. Choose a site that will never see a rototiller or you will live to regret it! Plant 16–24" apart in well-drained soil, sun or shade. Z3. **ME Grown.**

L765 ***A**: 1 for $5.75*
***B**: 3 for $14.50*
***C**: 6 for $26.00*

***Valeriana officinalis* Valerian** 2–4' tall. A strong and upright plant with small white or rosy flowers in flat clusters above glossy pinnate leaves. Roots traditionally used as an anti-spasmodic, nervine and sedative. Often used for sleeplessness, anxiety and other nervous complaints. Divide or harvest thick rootstock every 4 to 5 years. Plant 12–15" apart in moist well-drained soil in full sun. *We cannot ship to CT.* MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**

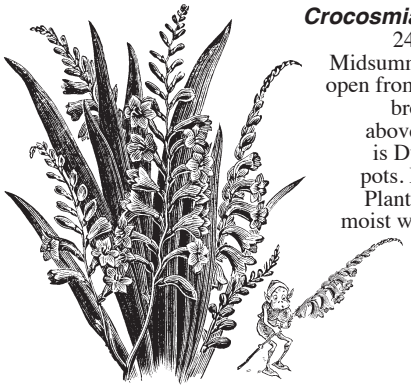


L766 ***A**: 1 for $7.25*
***B**: 2 for $12.50*
***C**: 3 for $16.75*

"My first tattoo: Fedco customer number! I love it!"
–Kelly LaMastra, Lenhartsville, PA

Tender Summer Bulbs

Spring-planted bulbs offer wonderful variety to the cutflower market and are a staple in old-fashioned gardens. Once upon a time, back roads beckoned my mother to spend many a summer Sunday in search of the best deal on roadside dahlias, glads and lilies. Every few miles she would find buckets brimming with blooms for 10¢ a stem. Nowadays it's more like $1. Spring-planted bulbs are not hardy to northern climes. Smart and thrifty people lift and store them over the winter; the rest of us treat them as annuals.



***Crocosmia* x *crocosmiiflora* 'Lucifer'** 24–36" tall. Glows in the garden! Midsummer sprays of bright red flowers open from bottom to top on long arching bronze stems, like bursts of flame above gladiolus-like foliage. *Lucifer* is Dutch for 'match.' Grows well in pots. Makes a long-lasting cutflower. Plant in full sun, 3" deep, 3" apart in moist well-drained soil.

L767 ***A**: 10 for $7.00*
***B**: 20 for $12.25*
***C**: 50 for $27.50*

***Dahlia* Rustic Sunset Dahlia Mix** 36–46" tall. Colors in this mix range from deep plum purple, dark burgundy, bronzy orange, rustic red, luminous coral and dusky antique pink. Provides endless displays of breathtaking blossoms from midsummer till frost, adding incredible late-season value to the cutting garden. Native to hot parts of the Americas and first developed as a food crop, ornamental dahlias are descended from years of breeding and crossing *D. pinnata* and *D. juarezi*. To overwinter, dig tubers before the last frost, dry them off and store them in a well-ventilated cool (35–45°) dark dry place. In spring after danger of frost, plant 3–4" deep, 12–24" apart. Set the tubers flat with eyes facing up. Grows best with 3–4 hours of direct sun per day, but will tolerate conditions from full sun to light shade. This year's stock is MOFGA-certified organic, brought to us by the hardworking Tania Cubberly and Adam Lemieux of Skyfall Flowers. **ME Grown.**

L768 ***A**: 3 for $17.25*
***B**: 6 for $30.00*
***C**: 12 for $54.00*

***Gladiolus* Sword Lily** 36" tall. Showy summer bloomer excels as a cutflower. Each stalk is covered with 10 or more open funnel-shaped flowers that bloom from bottom to top. Named for their sword-like leaves; a gladiolus is a small Roman sword. Each stalk blooms for about a week, roughly 8 weeks after planting.

***G.* Blue Moon Mix** Brilliant blue-violet color combinations for your cutflower fantasies.

L769 ***A**: 10 for $7.25*
***B**: 20 for $12.75*
***C**: 50 for $28.00*

***G.* Large-Flowering Glad Mix** A mercurial mix of colors, stripes, stipples, bicolors, tricolors, and everything else under the sun—what fun!

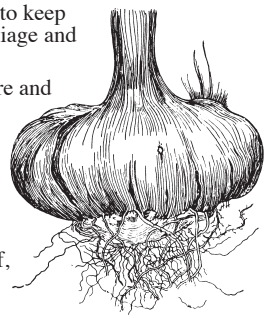
L770 ***A**: 10 for $5.25*
***B**: 20 for $9.00*
***C**: 50 for $20.50*

***G.* Mardi Gras Mix** A festive parade of blossoms in shades of purplish-pink and peachy-gold on vibrant green foliage. Purple, green and gold are three of the traditional colors often used in celebration of Fat Tuesday. Purple is said to symbolize justice; green, faith; and gold, power. This mix is bright and celebratory with a touch of subtle elegance.

L771 ***A**: 10 for $7.25*
***B**: 20 for $12.75*
***C**: 50 for $28.00*

Growing Gladiolus

- After the last spring frost, plant corms in full sun 5" deep and 8" apart.
- Stagger plantings for a long season of blooms: First planting in early to mid-May, then again every two weeks through mid June. This schedule will keep the flowers coming July through August.
- Hill or stake the corms at planting time to keep the plants from keeling over when the foliage and flower spikes get top heavy.
- Mulch with straw to retain even moisture and prevent weeds.
- Cut the stalks when 2–3 blossoms have opened, taking care to spare the leaves, which feed the developing corm.
- To overwinter the corms: dig them up after the tops have died, discard the old one, clean the new one, allow it to dry off, and store them in paper bags in a well-ventilated cool (35–45°) dark dry place.

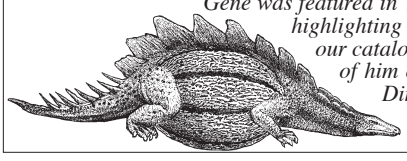


On the Retirement of Gene Frey

In February 2020, Gene Frey retired after 40 years as a worker-member of our cooperative. In Fedco's second year of operation, our founder CR Lawn recruited Gene for warehouse manager. As a coworker and leader in the business, Gene was always conscientious and tuned in, and CR took note early on that Gene would be critical to the future of Fedco. Not only was he the only one willing to don a scuba suit and wade through a few feet of chicken crap to clean out the old chicken barn that now houses our seed, but he also built our computer systems with David Shipman and ran the seed shop floor for a million years. By the end of his career, Gene was the one many of us called on constantly for all kinds of help or advice. We lovingly refer to him as Dad.

Gene helped build Fedco into the co-op it is today, one macro at a time. He is an artist, a carpenter, a morning drinker of Sleeptime Tea, an avid reader of SciFi, the guy we relied on for almost anything, from how to fix a computer, to questions about a leaky toilet, to a much-needed hug on a sad day. He exhibited the superpower of abstaining from sugar during the chaos of shipping season, a model of good health that he once expressed as an obligation to the job: to stay on his feet and be strong. He did it all. Most of all, he came to work putting his heart into each day and treating all of us as his collaborators.

Happy retirement, Gene! We are grateful for all you have done for Fedco, and we swear we are trying to limit how many times we call you with questions. We already miss the way you rock plaid shirts and that green snowflake sweater. May you now eat cookies every month of the year, chair tilted back, and be well for all your days!



Gene was featured in The Portland Press Herald *(Jan. 17, 2017) in an article highlighting old seed catalogs, something he archived for years as our catalog art and layout manager. You can also catch a glimpse of him on our Organic Growers Supply website modeling the Dino-melon t-shirt, which he designed.*

When you get your order: Immediate Care
DO NOT ALLOW ROOTS TO DRY OUT AT ALL!!!

When your new trees and shrubs arrive, they need to be planted as soon as possible. Don't be deterred by snow. If you can dig a shovel into the ground, plant your trees. If you wait until spring is in full swing, your plants might become stressed and have a hard time recovering.

Sometimes frozen ground makes immediate planting impossible. When this is the case, follow the instructions below and all will be well. **Why do we send plants even when there is snow on the ground?** The weather may be fickle but we must be steady. Bare-root plants need to move out of storage and travel to their permanent homes before or as they are breaking dormancy, but not much later. For our system to work, we must follow a tight shipping schedule regardless of regional weather conditions. We begin shipping late March and finish late April, sending orders by climate zones, warmer zones first.

If you can't plant immediately and are unable to store or heel in plants as instructed below, ordering bare-root plants may not be right for you.

Planting Woodies Within 48 Hours

Leave the plastic wrapping around the root ball. Add some water to remoisten the packing material and store your trees and shrubs in a cool shaded place like a shed, barn or cellar. Avoid heat and sunlight.

If You Cannot Plant Within 48 Hours

You can keep plants for a week or two by following one of these temporary measures and continuing to water as needed:

• Open your package and inspect for damage. Fold the plastic back from around the tops. Keep the wet shredded newspaper around the roots and re-wrap the plastic around the root ball, packing firmly to eliminate air pockets. Water as needed to keep the roots moist, but don't let them stand in water. Keep the trees in a cool shaded or dark place like a shed, barn, cellar or garage, but don't allow the plants to freeze before you get them in the ground. Avoid heat and sunlight.

• You could also "heel in" your plants temporarily in a protected cool shady spot. Dig a trench or turn back an appropriate amount of earth and bury the roots; tamp firmly to remove air pockets. Water thoroughly. Plant as soon as possible.

Caring for Other Plants Until Planting Time

Asparagus

Store asparagus roots dry and uncovered in a cool shaded place.

Hops

Refrigerate slightly moistened rhizomes in a plastic bag until planting.

Horseradish & Rhubarb

Open package slightly to allow the plants to breathe. They should be fine left in their packaging and kept in a cool place (ideally 35–50˚). They want to stay moist but not wet.

Mushroom Spawn

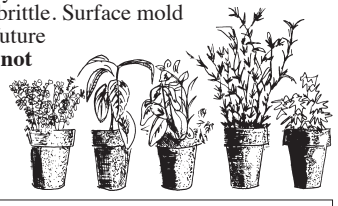
Refrigerate in packaging until ready to use.

Strawberries

We ship with the roots slightly on the dry side. If it's going to be a while until planting, mist the roots and re-cover. Refrigerate until you are ready to plant. When it's time to plant, do it in the evening or on a cloudy day.

Herbaceous Perennials

Open bags and check the stock immediately. Roots and crowns should be firm and pliable, not squishy or brittle. Surface mold is harmless and will not affect the plant's future performance. Pot up crowns and roots; **do not plant directly outdoors.** If you cannot pot the crowns up immediately, store them in their packaging in a cool (35–40˚) location for a short time. **See page 55 for full perennial planting instructions.**



The Perfect Tree Label

Commercially available garden labels do not last. Permanent marker fades. Aluminum tears off in the wind. And so on. Now, we make our own using vinyl siding. It works so well, we should remove it from all the houses and make it all into plant labels. It's inexpensive, or easily salvaged, and you can make dozens from a single piece of siding. Cut siding into strips using a utility knife. Snip strips to length using hand pruners. Drill a hole at one end. Attach with wire. Write on labels with pencil, NOT a marker. Pencil will last for decades.

TREE PLANTING AND CARE

The basics of tree care outlined here are meant to get you started. Obviously, we can't tell you everything you need to know in a few pages. Some specific information, like location or soil preferences of particular plants, is in the item descriptions. A soil test is useful in determining the specific needs of your site. Fedco's Organic Growers Supply offers a soil testing and fertilization recommendation service. Learn more at fedcoseeds.com/ogs.

Reading, observation, trial and error, and talking with other growers and with extension agents can expand your knowledge of trees and shrubs. Consult the OGS book list for recommended reference books. Also, find useful links at our website, fedcoseeds.com/trees.

General Planting Directions for Trees and Shrubs

The best way to ensure your plants will thrive is to follow cultural requirements. Choose the right site for the plant. Add soil amendments only as needed. Many native plants don't require any fertilization. Fruit trees may need more. (See next page for fruit tree fertilization recommendations.)

To reduce transplant shock, plant on cool cloudy days in the early morning or late afternoon. Soak roots of deciduous trees and shrubs for up to 24 hours before planting, but not longer. Keep the roots from drying out; even a few minutes in the sun and breeze can damage a tree or shrub. Keep them watered and covered until the moment you set them in their planting holes!

Follow these steps for planting:

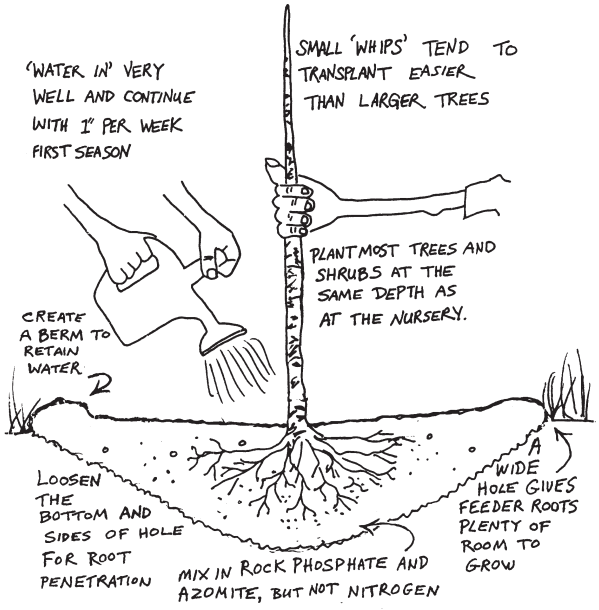
1. Dig a large hole, at least twice as wide and about as deep as the root system. Most roots grow laterally and need plenty of room to spread out. Your trees will benefit if the hole is at least 3' wide.

2. Loosen up the soil at the bottom of the hole and especially around the sides. For fruit trees, if you haven't used our *Deluxe Fall Preparation Method* (next page), you may add a 3-lb bag of our planting mix (available in our **Seeds & Supplies catalog**, or at fedcoseeds.com/ogs), or well-aged compost and mineral fertilizers like rock phosphate or azomite, but *not* raw manure or other nitrogen sources. Incorporate into the soil, then make a mound at the bottom of the hole over which to spread the roots.

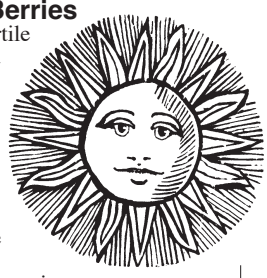
3. Examine the plant for a "dirt line" or a change in bark color indicating nursery depth. (This is different from the graft line.) Generally, you should plant trees and shrubs at the same depth they grew in the nursery. Set the plant in the hole and spread the roots out around the mound. Make sure the roots are not circling in the hole. It's better to trim roots a bit than coil them. Hold the plant at the right depth as you backfill the soil around it. Tamp firmly to remove air pockets.

4. Water immediately. Don't skimp on the initial watering; make sure there's plenty to settle in all the loosened soil. Wiggle the trunk as the water seeps in to ensure no air pockets remain around the roots. Leave a berm around each tree so water will not run off. Keep trees well watered throughout the first summer. They require the equivalent of 1–2" rain per week. Longer deeper soakings are effective; frequent sprinklings are not.

5. To remember which varieties you planted, paint a map of the orchard on your wall, or replace the plastic Fedco plant tags with permanent vinyl tags. See below left.


'WATER IN' VERY WELL AND CONTINUE WITH 1" PER WEEK FIRST SEASON
SMALL 'WHIPS' TEND TO TRANSPLANT EASIER THAN LARGER TREES
PLANT MOST TREES AND SHRUBS AT THE SAME DEPTH AS AT THE NURSERY.
CREATE A BERM TO RETAIN WATER
LOOSEN THE BOTTOM AND SIDES OF HOLE FOR ROOT PENETRATION
MIX IN ROCK PHOSPHATE AND AZOMITE, BUT NOT NITROGEN
A WIDE HOLE GIVES FEEDER ROOTS PLENTY OF ROOM TO GROW

Choosing a Site for Fruit Trees and Berries



The best sites for fruit crops have well-drained fertile soils, protection from wind, good air drainage and full sun. A gentle slope and 6–8 hours of full sun per day is ideal. Good air flow will moderate frosts and fungal disease. If possible, avoid "frost pockets."

Sunny south- or west-facing slopes are not advisable for less hardy varieties. These slopes tend to warm up before the danger of frost has passed. Trees may flower prematurely and then be damaged by frost, causing loss of fruit. South and west slopes may also have widely fluctuating early spring temperatures that can damage less hardy trees.

Soil pH for fruit trees should be between 5.5 and 8.0, toward the lower end for apples, the higher end for peaches, and in the middle for others.

Fruit species have optimal space requirements. See chart, next page.

Do not plant trees where power lines will interfere with them.

Fall Preparation or Spring Initial Feeding for Fruit Trees

If you're interested in preparing locations for your trees this fall, or for feeding newly planted fruit trees, the following amendment recipe should address most sites in the eastern U.S., which tend to be acidic and moderate to low in calcium and phosphorus. To order any of these products, refer to our Seeds & Supplies catalog, or fedcoseeds.com/ogs.

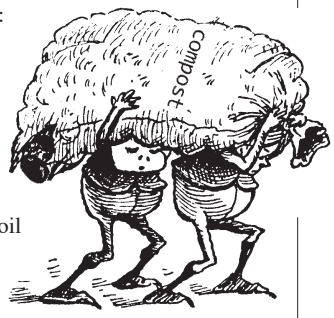
Deluxe Fall Preparation Method

Without digging the hole, cover an area 4–6' in diameter with:

- 5 lbs gypsum or Hi-Cal lime
- 5 lbs colloidal phosphate (short-term calcium and phosphorus)
- 5 lbs azomite (long-term minerals and trace minerals)
- 5 lbs granite meal (for improved soil texture)
- 2-3 lbs Hum-Amend Max (aids mineral and rock-powder breakdown)

For building high levels of humus, also add:

- 2 lbs alfalfa meal
- 2 lbs bone char
- 2 lbs kelp meal
- 2 lbs blood meal
- 100 lbs compost (1/8 yard)



Cover with a 3–4" mulch of lawn clippings, leaves or brush chips, which will smother the sod, conserve moisture, prevent leaching and provide a habitat for soil organisms to break down the recipe. In the spring, pull back the mulch and dig your tree hole, incorporating the mineral supplements and compost into the backfill.

If you didn't get around to fall prep, you can apply this same mix as a mulch to your newly planted tree in the spring.

Simpler Method

Forgo the soil amendments and simply pile 1–2 wheelbarrows of compost on each planting-hole site. If you live by the ocean, add a couple wheelbarrows of seaweed. Then cover with mulch. In the spring, pull back the mulch and plant your fruit tree, incorporating the compost into the hole as you dig.

Feeding Older Fruit Trees

Cover the surface of the ground out to the tree's drip line with the same materials listed above. For larger trees (five years and older) increase the mineral amount to 10–15 lbs each. For ancient trees you can use up to 25 lbs of each mineral in a ring beneath the drip line.

For revitalizing older fruit trees, you could also consider using our Ancients Rise fertilizer mix, found at fedcoseeds.com/ogs.

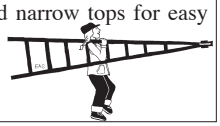
Mulch as described above.

Soil testing & organic fertilizer recommendation service

Which soil amendments do you choose and how much do you apply? Don't guess—test! Fedco can help. We'll send you a soil test kit and sampling instructions, plus a postage-paid box to return your soil sample and test form to the Maine State Soil Lab. Once your results are in, we'll offer customized recommendations for how to correct any deficiencies or imbalances in your soil. Cost is $45. **Learn more about this service in our Seeds & Supplies catalog**, or at **fedcoseeds.com/ogs**.

Orchard Ladders: Sturdy lightweight traditionally shaped wooden orchard ladders have wide bottoms for stability and narrow tops for easy handling and placement. Contact the manufacturer:

Peter Baldwin, (207) 722-3654
baldwinpetert@gmail.com
baldwinappleladders.com



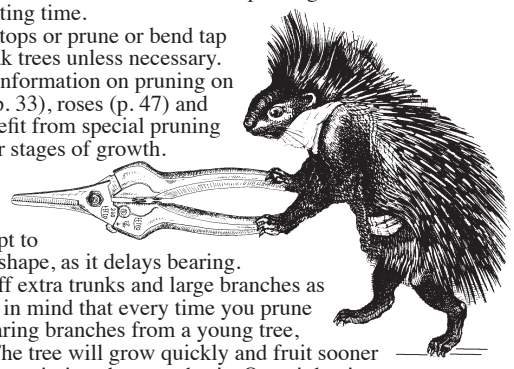
Initial Pruning at Planting Time

All Trees and Shrubs

Prune any branches that were broken during shipping. Sometimes we need to prune a central leader in order to fit a tree into a shipping box; don't worry—a new leader will grow from the topmost bud. Prune all dead or injured branches and roots. Further pruning of most trees is not necessary at planting time.

Do not prune tops or prune or bend tap roots of nut or oak trees unless necessary.

Find general information on pruning on p. 42. Conifers (p. 33), roses (p. 47) and lilacs (p. 50) benefit from special pruning especially in later stages of growth.



All Fruit Trees

Avoid pruning young trees except to establish a basic shape, as it delays bearing. It's okay to cut off extra trunks and large branches as needed, but keep in mind that every time you prune potential leaf-bearing branches from a young tree, you set it back. The tree will grow quickly and fruit sooner if you allow it to maximize photosynthesis. Once it begins to fruit, you can prune annually. Always remove suckers or root shoots.

On peaches and plums, the trees may want to develop 2–4 leaders, or an open-vase shape. Always prune just above a good strong bud that faces a direction you'd like your branch to grow. On apple and pear trees, you may choose to either leave the central leader alone and let it grow or cut it back according to the instructions below. Either way is acceptable; it's a matter of personal preference.

Apple Trees

Apple trees will almost always benefit from light initial pruning to establish shape. After that, refrain from pruning until the tree begins to fruit.

• **Year one (initial planting time):** If the tree is a branch-less "whip," you may cut the top back to a strong bud about 3–4' from the ground. This will encourage branching. If the new tree arrives with branches, prune off all but 3–4 branches at the height you'd like for your first tier, about 3–4' from the ground, or higher if you prefer. The lowest scaffold (branch layer) should be very wide to collect as much sun as possible. If too low, these long branches will rest on the ground under the weight of fruit, and the deer will have a field day. Also, it becomes difficult to mow under and mulch.

Some folks choose not to prune at the time of planting and wait to shape the tree in subsequent years. This method is fine, too.

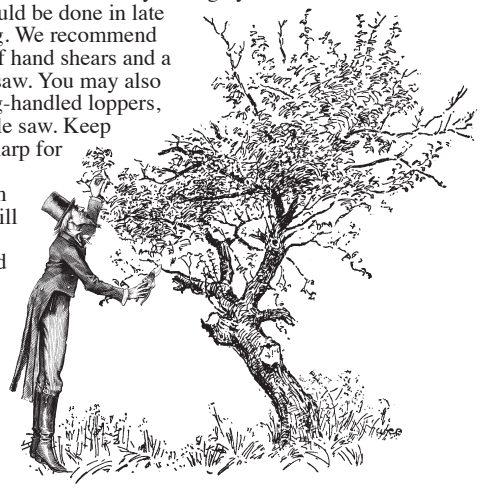
• **Year two:** Trim off root suckers or other odd branches that come up from around the base. Otherwise, leave the tree alone and let it grow.

• **The next few years:** If something looks really crowded, broken or dead, prune it. Otherwise, leave your tree alone and let it grow. If you don't fuss over it too much, you'll get fruit sooner!

Pruning Established Fruit Trees

Once your fruit tree begins to bear, you should prune annually. Good pruning brings sunlight to all parts of your tree. Maximum sunlight encourages more and higher-quality fruit. Sunlight also encourages fruit buds to form for next year's crop. A well-pruned tree will produce larger fruit and will tend toward more annual bearing. Good pruning discourages fungal diseases and promotes greater spray penetration. There's an old saying that a bird should be able to fly through your fruit tree.

Most pruning should be done in late winter or early spring. We recommend a good-quality pair of hand shears and a lightweight pruning saw. You may also wish to invest in long-handled loppers, a pole pruner or a pole saw. Keep your pruning tools sharp for smooth clean cuts.



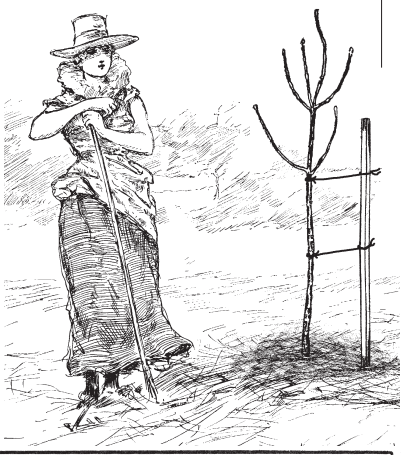
Any good book on growing fruit trees will have the information you need. Consult old and new books as well as orcharding articles and develop a system that works for you. Pruning is not difficult and will make a huge difference.

Mulch

Keep weeds and especially grass away from new trees and shrubs. Apply a 2–4" mulch of composted material—leaves, wood chips or hay—out as far as the drip line. A 1/2–1" topdressing of alfalfa meal beneath the mulch may substantially reduce transplant shock. Keep mulch back several inches from the tree trunk. We lay down cardboard or newspaper and spread mulch on top of it. Mulch encourages earthworms, holds moisture, keeps down weeds, insulates against excess heat and cold, aerates and loosens soils, builds humus and fertilizes feeder roots, 90% of which are within 6" of the surface.

Staking & Crooked Trees

Newly planted standard-sized and semi-dwarf fruit trees and ornamental trees seldom need staking. If your tree is in a very windy site or develops a leaning habit, staking may help. Dwarf apple trees do require staking. Drive a stout post near the tree. Wrap the tree trunk with a scrap of burlap or rubber to protect against abrasion. Secure the wrapped part of the tree to the post with string or wire. Tie tree somewhat loosely, as a slight rocking motion will encourage rooting. Once roots are well anchored, the stake may not be needed. Mark small trees with a stake with ribbons to warn operators of lawn mowers, tractors, cars and skidders.

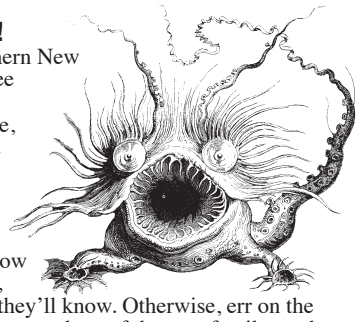


Some tree varieties naturally tend to grow a little crooked (like Redfield apple!), and they won't grow straight not matter how much room we give them in the nursery. To mitigate this issue, you may try staking. You may also try planting the crooked tree so the roots are at a slight angle and the top is more upward-pointing, as if to split the difference. Most trees do not grow perfectly straight. Retraining your eye to appreciate a tree's unique form may be easier than fighting nature.

Spacing of Fruit Trees, Nut Trees & Berries

	between plants	between rows
Apples, Dwarf	7–15'	15'
Apples, Semi-dwarf	15'	15'
Apples, Standard	25–30'	25–30'
Asparagus	1–2'	4'
Blackberries	3–4'	6–12'
Blueberries, highbush	3–6'	8–10'
Blueberries, lowbush	1'	1'
Grapes	8'	8–10'
Hazel	4–6'	hedge
Kiwis	10'	10'
Nut trees - orchard	35'	35'
Nut trees - forest	20'	20'
Pears, Asian Pears	20'	20'
Raspberries	2'	6–12'
Stone Fruit	15–20'	15–20'
Strawberries	see instructions, p. 26	
Sweet Cherries	25'	25'

Beware the Apple Borer!



In many parts of central and northern New England the roundheaded appletree borer, *Saperda candida*, is the number one enemy of young apple, crabapple and quince trees. If you are growing young apple trees in these locations, you must protect your trees from this pest. Farther south and north the borer may not be a pest. If you don't know if they are a problem in your area, check with any grower near you: they'll know. Otherwise, err on the side of caution. Also feeds on other members of the rose family, such as pear, hawthorn and Amelanchier.

Borer beetles lay eggs under the bark near the base of the tree. The developing larvae tunnel through the wood, eventually weakening the tree until it falls over. The trouble sign is small deposits of orange sawdust, called frass, at the base of the tree. Check lower trunks for frass and tunneling in late May, and again in September. Left unchecked, borers usually mean death for young trees.

Here are our strategies for controlling borers:

Coat the trunks with Neem or Paint

• **With Neem Oil** We have been experimenting with several methods for treating borers using neem oil. It's easy and effective. All you need is a paintbrush and undiluted neem oil warmed to liquify. Cover young tree trunks from the soil line up 12". We apply one time only around July 1. If applied in May or early June, the neem dries and becomes ineffective. We have noticed some sensitivity on the adventitious root bumps of M111 and are currently experimenting with diluted neem formulas in our local nurseries and at the Maine Heritage Orchard. These experiments include spraying a 2% neem solution on clonal rootstocks as well as different blends of neem, Surround (clay powder), and powdered milk paint. We hope to have results from these trials by our next catalog!

• **With Paint** After neem oil, paint is likely the best deterrent. It's easy and requires no hard-to-find ingredients. Do not apply paint until trees have been in the ground for 3–5 years. Until then, be sure to continue monitoring them for signs of borer.

Recipe: Mix white interior latex paint with joint compound. (The stuff you smear on sheet rock joints and nail holes—you can buy a small tub at any hardware store. Some exterior paint formulations contain ingredients that can harm the tree's phloem.) The consistency should be thick but still quite easy to paint, not glob on. Repaint as needed. This mix will help deter borers and also make detection of infestations easier. Once you locate a borer hole, you'll have to cut or blast it out (see below). Look for the orange frass!

Cut It Out Once you've identified a hole or soft spot in the trunk, insert a wire and dig around until you locate and kill the larva. Cut away soft spongy pockets with a knife. Even serious carving is less harmful to the tree than leaving the larvae alive inside.

Blasted Borers When you discover a soft spot or hole in the tree, get yourself a can of compressed air (for cleaning computers). Put the long skinny tube nozzle up to the hole and give it a blast. Should do the trick.

The Polyculture Deterrent Borer beetles thrive in shady moist warm environments. Keep grass back at least 6" from the tree base. Trials in our "functional" orchard suggest that a mixed polyculture environment may disguise the apple trees and fool the borers. We plant woody and herbaceous perennials around the trees, keeping them back 12" or so. Borers are lazy opportunists. If there are a lot of apple trees within easy reach, they will attack. Otherwise, you may never see them. The polyculture orchard may present too much work for them.

Scab in the apple orchard

Apple scab (*Venturia unaequalis*) is the most challenging disease for the New England apple grower. Scab is a fungus, spread by spores that overwinter in fallen fruit and leaf litter, rising up in rainy spring weather to cause grief all over again. It appears as small rough black patches on the fruit or foliage. A bit of scab is not a bad thing. It won't hurt you or your tree or fruit. Some growers actually believe that a small amount of scab triggers a beneficial self-protection response in the apple. But a lot of scab can destroy the fruit and even kill the tree. Severity of infection can vary depending on the year, the site, and the variety.

With organic or conventional fungicides as a last resort, what can you do to avoid or minimize scab damage in your trees?

• **Avoid susceptible varieties.** Although nearly all apples are susceptible to some extent, certain varieties are especially vulnerable to scab. In particular, McIntosh and its relatives are scab magnets. These include Cortland, Fameuse and Macoun. If you grow these apples, you'll probably struggle with scab in your orchard. If you can avoid these varieties, you may be able to keep scab to a tolerable level without spraying fungicides. Most heirlooms are susceptible but should be quite tolerant as long as highly susceptible varieties are kept away.

In 1945, Purdue, Rutgers and the University of Illinois began a collaboration to develop scab-immune varieties. Many of these have PRI in their names. (Prima, Pristine, Williams Pride, etc.) They bred the varieties using *Malus floribunda* as a parent. It contains a gene that imparts scab immunity to the fruit. By crossing and recrossing, they were able to isolate and include this gene in the final introduction. We've offered some of these varieties, including GoldRush from the PRI program, and Liberty from the associated New York breeding program. If you like the fruit from these varieties, growing them can be a good strategy for avoiding scab.

• **Thin the fruit.** In late spring or early summer, we thin all our tree fruit, remove enough fruitlets that the mature fruits won't touch. You want air circulation. Insects also like those places where fruits rub against each other.

• **Clean up drops and fallen leaves.** Scab lives in the drops (fallen fruit), as do insects. Eat the drops, make them into cider, feed them to your livestock or compost them. Some farmers let livestock in the orchard to eat the drops. Also rake up leaves in the fall. Burn, compost or mow them. By practicing good hygiene in the orchard, some growers have been able to grow good McIntosh organically.

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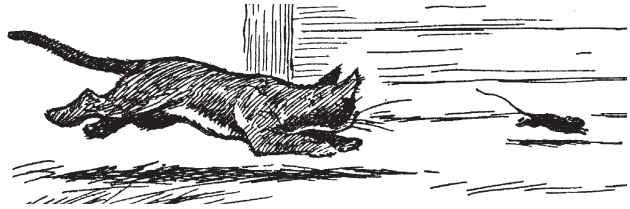


Protecting Trees from Mice and Voles

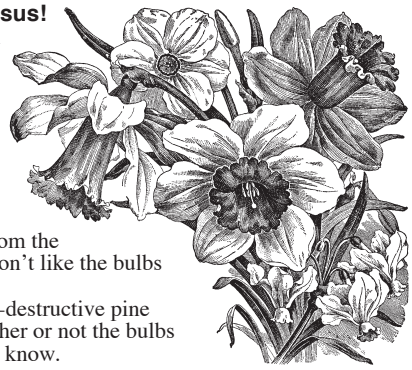
Fruit trees and ornamentals are sometimes girdled by mice or voles eating the bark. Girdling will usually kill the tree or shrub. The danger is greatest in winter. Stomp around the trunks after each fresh snowfall to create a packed-ice barrier that will prevent mice from traveling beneath the snow. Keep the grass mowed in the fall and remove large mulch piles from near the trunks. Rodents like to nest in hay more than in chip mulches. A wrap of hardware cloth or a plastic spiral tree guard will protect your tree from being girdled.

If you use screening or plastic spiral tree guards on apple, quince or crabapple trees, remove them from April to October, as they attract borers if left on the tree in the summer.

Our trials show that a mulch of wood chips surrounding young trees greatly reduces the chance of summer vole damage. Tall grasses invite them in. The polyculture model may provide cover for the voles and can result in summer vole damage. So keep the tall perennials back about 12" from the tree.

Also, make your orchard hawk friendly.

Voles Don't Like Narcissus!



For many years we've been planting daffodils around the base of some of our apple trees. No particular reason; it just looks great. Come to find out that you can beautify your orchard and deter voles at the same time. Plant daffodils in a circle a foot or two away from the base. The tunneling voles don't like the bulbs and will veer away.

We don't have the super-destructive pine voles in our orchard—whether or not the bulbs would deter them, we don't know.

Oh Dear, Deer!

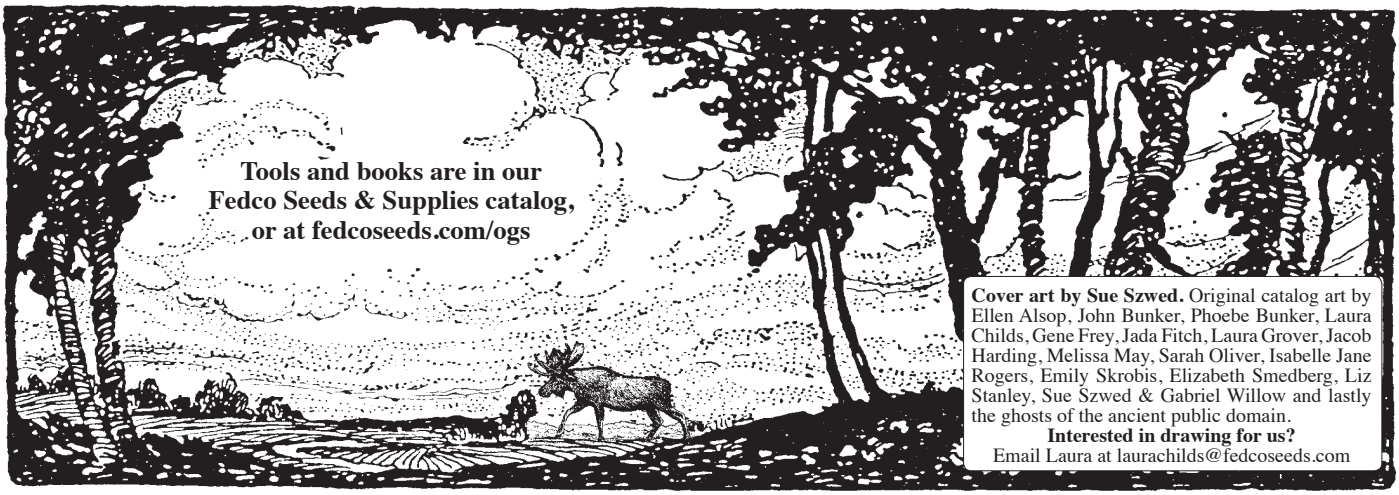
The best deer protection is a dog in the yard. If you don't have one or if your orchard is too far from the house, an 8' sheep fence will work. Some people have good luck with electric fences. Small protective fence enclosures can be made by circling your tree with a cylinder of chicken wire or other fencing.

Aphids and ants

Aphids can do a lot of damage to apple trees and they make the young leaves look gross. Whenever you see aphids you will see ants climbing up and down the tree feeding them. Here's an easy solution. Wrap a piece of stiff paper about 6" wide around the trunk about a foot or two off the ground. Tape this sleeve to itself but not to the tree. Smear Tanglefoot (available in our **Seeds & Supplies catalog**) on the paper. Ants will not cross the barrier and, without the ants, the aphids will die. In a day or two no more aphids.

Caterpillars

Most caterpillars will not damage healthy plants and are important members of the environment. However, a few kinds, such as tent caterpillars, are extremely destructive to fruit trees. You'll know when you see them—they hatch in large crowds and rapidly defoliate plants. Vigilant daily observation, manual collection and disposal are necessary from mid-summer to fall. Be careful handling browntail moth caterpillars. They can cause a severe rash.



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Index

	Page
Abies	33
Acer	32
Achillea	55, 63
Aconitum	55
Actaea	63
Actinidia	28
Agri-gel	33
Alcea spp.	55
Alchemilla	63
Allium	55
Althaea	64
Amelanchier	40
Apios	29
Apple	4-17, 44-45
Arborvitae	33
Arisaema	55
Armoracia	53
Arnica	64
Aronia spp.	40
Artemisia	64
Asarum	55
Asclepias	55
Asian Pear	20
Asparagus	53
Aster	62
Astragalus	64
Baptisia	56
Bayberry	45
Beach Plum	46
Bee Balm	65
Belamcanda	56
Berries	24-26
Betula spp.	32
Birch	32
Blackberry	24
Blackberry Lily	56
Black Cohosh	63
Black Haw	51
Black Raspberry	24
Black Walnut	30
Blazing Star	59
Bleeding Heart	56
Blueberry	25
Blue Flag	59
Boneset	64
Books	14
Bulbs	66
Bunchberry	56
Butternut	30
Calluna	51
Calycanthus	40
Cane Fruits	24
Carolina Allspice	40
Carya	30
Castanea	30
Catmint	59
Cedar	33
Cercis	40
Chelone	56
Cherry, Cornelian	41
Cherry, Nanking	46
Cherry, Pie	21
Cherry, Sweet	20
Chestnut	30
Chinese Milk Vetch	64
Chokeberry	40
Cider Apple	16-17
Clethra	40
Collections	
Cider Apple	17
Crabapple	45
Grape	28
Heirloom Apple	15
Hybrid Plum	23
Lingonberry	52
Pear	19
Perry Pear	19
Comfrey	62, 65
Coneflower	64
Conifers	33
Cornelian Cherry	41
Cornus spp.	41, 56
Corylus	30
Cotinus	42
Crabapple	44-45
Cranberry	52
Cranesbill	57
Crocosmia	66
Culver's Root	62
Cydonia	42
Dahlia	66
Daylily	58
Delphinium	56
Dicentra	56
Diervilla	42
Digitalis	56
Dogwood	41
Echinacea	64
Elderberry	48-49
Elm	32
Eupatorium	64
Evergreens	33
False Indigo, Blue	56
Ferns	57
Filbert	30
Fir	33
Forsythia	42
Foxglove	56
Fragaria	26
Garden Roots	53
Gaultheria	52
Geranium spp.	57
Ginger, Canadian Wild	55
Gladiolus	66
Glycyrrhiza	64
Goldenrod, Stiff	59
Grape	27-28
Groundcovers	51-52
Groundnut	29
Hamamelis	43
Hazelnut	30
Heather	51
Helenium	58
Hemerocallis	58
Hens & Chicks	61
Hickory	30
Hollyhock	55
Honeysuckle	29
Honeysuckle, Bush	42
Hophornbeam	32
Hops	29
Horseradish	53
Hosta	58
Humulus	29
Hydrangea	43
Ilex	43
Iris	59
Jack-in-the-Pulpit	55
Juglans spp.	30
Juneberry	40
Kiwiberry	28
Lady's Mantle	63
Lavender	65
Leucanthemum	59
Levisticum	65
Liatris	59
Licorice	64
Lilac	50
Lily	59
Linden	32
Lindera	43
Lingonberry	52
Lobelia	59
Lonicera	29
Lovage	65
Lungwort	61
Malus	4-17, 44-45
Maple	32
Marshmallow	64
Medicinal Plants	63-65
Medlar	45
Mentha	65
Mespilus	45
Milkweed	55
Mint, Chocolate	65
Mint, Mountain	65
Mockorange	45
Monarda spp.	65
Monkshood	55
Morus	45
Mulberry	45
Mushrooms	54
Myrica	45
Nannyberry	51
Nepeta	59
Ninebark	45
Nuts	30
Oak	32
Oligoneuron	59
Onion, Flowering	55
Ostrya	32
Papaver	61
Pasque Flower	61
Peach	21
Pear	18-20
Penstemon	61
Peony	60
Perennial Plants	55-65
Perovskia	61
Philadelphus	45
Phlox spp.	61
Physocarpus	45
Picea spp.	33
Pine	33
Plantanus	32
Plum	22-23
Plum, Beach	46
Poppy, Oriental	61
Pruning	42, 68
Prunus	20-23, 46
Pulmonaria	61
Pulsatilla	61
Pussy Willow	48
Pycanthemum	65
Pyrus	18-20
Quercus	32
Quince	42
Raspberry	24
Redbud	40
Redosier	41
Rheum	53
Rhubarb	53
Rootstock	5, 38-39
Rose	46-47
Rubus	24
Sage, Russian	61
Salix spp.	32, 48
Sambucus spp.	48-49
Scionwood	38-39
Sempervivum	61
Senna	62
Serviceberry	40
Shadbush	40
Shade Trees	32
Shasta Daisy	59
Smoketree	42
Sneezeweed	58
Spicebush	43
Spruce	33
Stewardship Apple	14
Stone Fruit	20-23
Strawberry	26
Sugar Maple	32
Summersweet	40
Sword Lily	66
Sycamore	32
Symphyotrichum	62
Symphytum spp.	62, 65
Syringa spp.	50
Thuja	33
Tiger Lily	59
Tilia	32
Tools	54
T-shirts	10
Turtlehead	56
Ulmus	32
Vaccinium spp.	25, 52
Valerian	65
Veronicastrum	62
Viburnum spp.	51
Vines	27-29
Vitis	27-28
Walnut	30
Wild Bergamot	65
Wild Raisin, Northern	51
Willow	32, 48
Winterberry	43
Wintergreen	52
Witch Hazel	43
Wormwood	64
Yarrow	55, 63
Order Info	**34**
Order Forms	**35-38**

USDA Hardiness Zone	Average Minimum Temperature
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